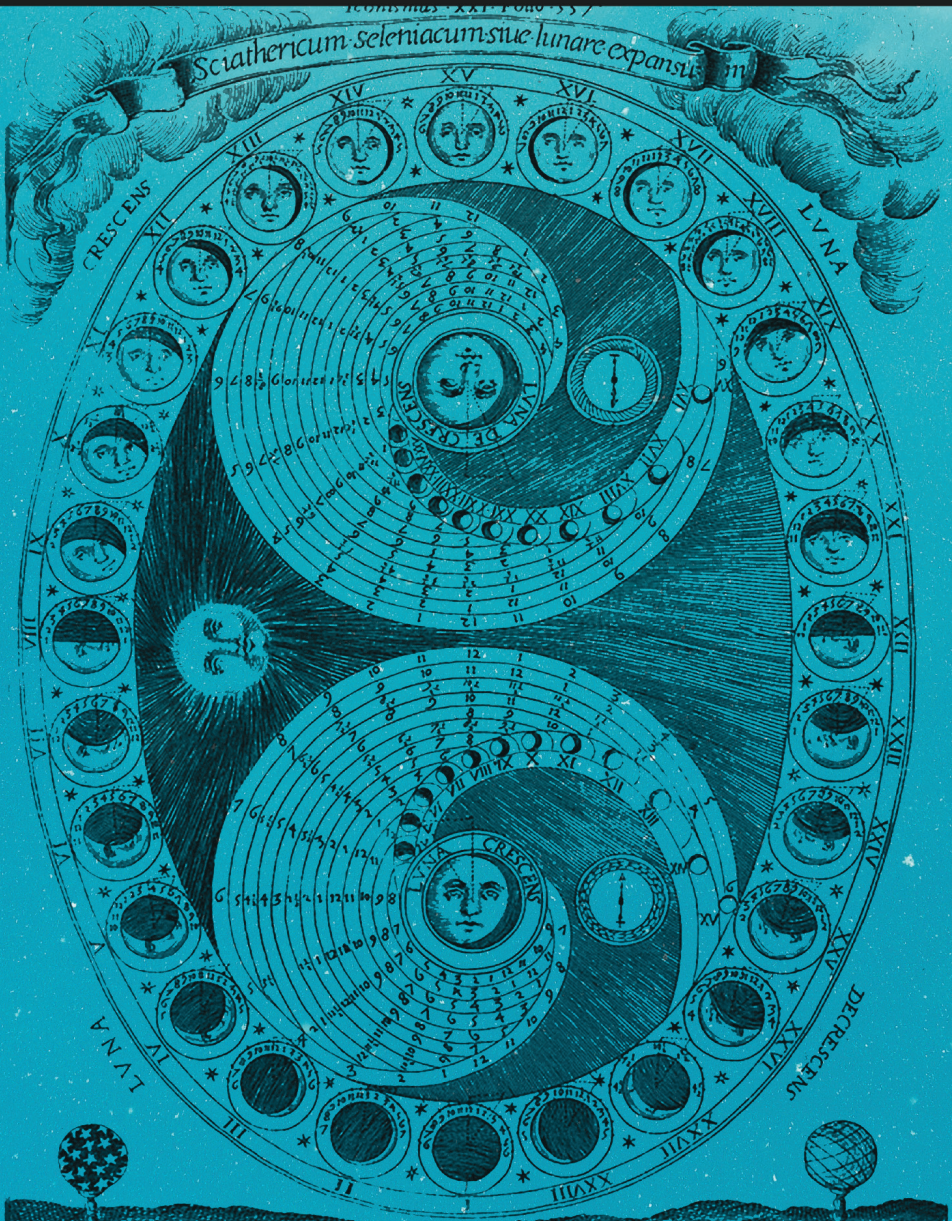
Lunar syzygies and quadratures

A LETTER TO THE DENIZENS OF THE MOON

Carmen Fernández Galán Montemayor



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By Carmen Fernández Galán Montemayor
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PROLOGUE: NATHANIAL GARDNER

University *of* Glasgow

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To the Moon Dwellers

If night is a dark mantle that hides a truth which can only be perceived through those small orifices that are the stars, the Moon represents a wide path towards knowledge.

GNOSTIC METAPHOR ABOUT THE UNIVERSE

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Prologue

When was the last time that you contemplated texts censured by the Spanish Inquisition? Or books on space travel? The English translation of Carmen Fernández Galán Montemayor's *Lunar syzygies and quadratures…* is a study and a critical edition of a manuscript that circulated clandestinely and anonymously in 1775 because it featured an episode of what today we might call science fiction. It is a fictional journey to the moon almost 200 years before science actually lifted such accounts from the realm of fantasy and began to put them in our history books and scientific halls of fame.

As I read the account (before reading the critical guide to it), I found it fascinating. While I know that civilizations have contemplated the heavenly bodies since before written history began to exist, I had never stopped to wonder about the point at which individuals began to have serious thoughts about space travel. Undoubtedly this is not the first of such texts, but it is the oldest one that I have encountered in colonial Mexico. As I scoured the text, I found it hard to believe that this tale was censured by the church authorities. In my estimation and influenced by presentism (it is impossible to completely escape the present), I struggled to find offensive and dangerous material. What I did find was an impres-

sive amount of information that suggested a writer with a broad world view, an active imagination, and strong notions of science. The fact that in one of the relatively remote regions of the Mexico dominated by the Spanish a text surfaced that evidenced sound knowledge of world geography (at least within the Spanish world) suggested a nuanced grasp of the globe as it spoke about locations relevant to space observations (such as the references to the mountains in Tenerife and Pichincha, Peru). The trip itself suggests more imagination than science. However, it is one that inspires. It allows the readers to contemplate journeys such as this one and consider how it might have provided fuel for budding scientific thought or those who dreamed of the heavens. The censure of the document makes it obvious that political powers of that time wanted to center the public's minds on other activities. Such devotions as the ones manifested in this trip to the moon were not going to advance the causes of the leaders of those times.

Carmen Fernández Galán Montemayor and her translator, Luis Ricardo Pérez Cervantes, should be applauded, firstly for their translation. It is clean and clear. It is easy to read and this is no small feat given the original text they were working with, which posed challenges in terms of the neologisms as well as archaic language from the age. The author's critical text is also a well thought out study. She unravels the study in many terms, intellectual thought, political context, tendencies from that period, and considerations that connect it to our present time. I found the author's philosophical context particularly useful in understanding why such a work should be made known because it helps the reader to understand the regular censure of free thought and how writings that suggested critical thinking, liberty, travel, and anything related with the questioning of the *status quo* was considered dangerous and was subject to prosecution. While this text is different

from those of Erasmus and other European philosophers banned by Spanish authorities governing the New World, the free range of imagination and open thinking found in this text that Fernández Galán has brought into focus shows how precious the freedom of thought is in our time.

Two points that Fernández Galán covers in her critical essay caught my attention and gave me pause. The first was the state of the marginal texts and the literary canon. We are all very familiar with censorship, however, we often do not think about the long-term effects on such activities. We take it as a given that such acts will limit our knowledge, and censorship, in the long run, is often overcome as regimes change and as prohibited ideas are allowed to circulate. However, even when these texts are incorporated, they are often still on the fringe, marginal texts not accepted in the context of their time. There are many examples of this in the contemporary world that testify the use of narrative (fiction, novel or essay) as a means of criticising the system. Consider the Chilean study *Como leer al pato Donald* (1972) by Ariel Dorfman and Armand Mattelart, which was banned in the USA on account of intense lobbying by the Disney corporation. Or the case of *The joke* (1967) and *La fête de l'insignificance* (2013) of Milan Kundera that use irony to talk about the regime, reminding us of the advantages of writing in fiction in order to express the ideas with freedom. Like the critical edition studied here, those books were unlikely to bring down an empire, but its innovative thoughts were questioned and silenced by those in power. However, just like you can purchase copies of Ariel Dorfman and Armand Mattelart's books that were eventually printed and circulated in the United Kingdom, this imaginary trip to the moon is now accessible. Yet their day for canonical incorporation has probably passed. Such texts

are now footnotes in the canonical narratives (if that) Fernández Galán's study brings such tendencies into question, and rightly so.

The other point that the professor makes is how knowledge sets us apart. To enlighten oneself is to make oneself a foreigner. She reflects on how the acquisition of knowledge changes us, and she notes the different philosophers of the day and we are allowed to reflect upon how the insight they offer creates changes in the readers. It foreignizes them. One could argue that such a perspective adopts a dim view of the society in which one lives, implying that the rest are unenlightened to such an extent that those who have acquired new knowledge are foreignized. However, I do not think that is what the author suggests. Rather, she seems to be suggesting that the reading of lofty literature enlightens, it fills with light that allows to see the world in new ways. It broadens horizons and opens to new possibilities that take the mind (and sometimes the body) to new realms where one becomes a foreigner. Anyone who has spent an extended amount of time in a new land knows this feeling of foreignization and has experienced the intense learning that accompanies it. However, those who have become foreigners also know that a return to your previous state is never really possible. You can go back, but you are never the same. Any astronaut from our times when space travel is definitely possible will confirm this idea as well.

Perhaps that is why such books, like the one here translated and explained with great skill, were censured years ago. Such books that bring light to the mind and soul expand, inspire, and demand. They demand more wisdom and experience; they invite change. To anyone that has imposed a state-of-affairs, these can easily be viewed as threats to their power. Should this lunar voyage be seen as an early map to space travel? Probably not. Could we consider it an early example of science fiction? Possibly yes. However, it can

definitely be seen as a book that offers a different and refreshing view of fiction in the final years of Spain's colonial power over Mexico. With such strong imagination, interest in science, and understanding of the wider world, and a hunger for exploration, it is of no surprise that the Mexico of that past context would soon gain its independence.

To the reader

The circulation and fortune of texts is subject to the vicissitudes of fate and power: while there are eras in which all kinds of ideas are freely spread, there are others in which a conflict of interests hinders their transmission by means of oppressive instruments. A typical example of these was the Tribunal of the Holy Office of the Inquisition that, being in charge of securing orthodoxy, promulgated edicts for the prohibition of texts and processed authors of sermons, collections of poems or any other work that could contain propositions it considered heretical. Such is the case of a manuscript forgotten in the archives of censure, that circulated as anonymous in the province of Yucatán towards the end of the XVIII century and which was submitted to scrutiny by the Holy Office, but whose content remained inaccessible to most of the readers of its time: *Lunar syzygies and quadratures adjusted to the Mérida of Yucatán meridian by an anctitona or denizen of the Moon, and sent to the Bachelor Don Ambrosio de Echeverría, tuner of funeral Kyrie in the Parish of Jesus of said city, and to the current professor of Logarithmic in the Town of Mama of the Yucatán Peninsula, in the year of the Lord 1775.*

From the title, a textuality out of the ordinary is announced, as it is the indication of an addressee who is discovered in the interior of the letter that narrates the visit of a Frenchman to the Moon. The text is, by itself, a trap: its referentiality is misleading, it hides real meaning behind double meanings; it is, more than anything, a pretext for communicating extraliterary matters, disseminating science, making critiques and avoiding condemnation. The scarce, or rather nonexistent, studies[1] and the lack of knowledge about the worth this manuscript has, are some of the reasons why it must be recovered in order to grant it its righteous place in an inconclusive history, given that it is unique in its genre in New Spain; there is no evidence where this strange combination of epistolary genre, fiction narrative, satire and almanac, and even less about interstellar flights, takes place. The inquisitorial process followed against the author, the friar Manuel Antonio de Rivas, unveils his satirical intention and allows the identification of some targets of the criticism, however, artifices hinder the unraveling of the reality and fiction planes that merge into each other continuously (due to the double intentionality) which complicates the interpretation work to distinguish between real facts and what is mere invention of the author.

Lunar syzygies and quadratures… is a testimony of the polemics of its time from the plane of knowledge to the one of politics,

1 The first reference of this tale, written by Manuel Antonio de Rivas, is found in *La literatura perseguida en la crisis de la Colonia* by Pablo González Casanova (1958). The physical description of the manuscript is in *Catálogo de Textos Marginados Novohispanos* where it is classified as a satirical-social narration, along with two apologetic letters written by Rivas in 1773. Ana María Morales published the first complete recovery in 1994 in the INAH Magazine, José Joaquin Blanco mentions this tale in *Esplendores y miserias de los criollos* (1989), as well as Gabriel Trujillo Muñoz in *Biografías del futuro. La ciencia ficción mexicana y sus autores* (2000). Carolina Depetris published a study and recovery of the work in UNAM (2009); Carmen Fernández Galán published "Un relato del siglo xviii o el dilema de la clasificación" (2000) and in 2010 the work hereby translated.

as well as of one of the many victims of orthodox censorship; to this must be added its richness from the literary point of view, an aspect in which it also marks a transition process: the tension between the Baroque and the Enlightenment in the tale is notorious, as well as between Hermeticism and Mechanism, manifested in the narrative's structure, hence its rarity and extravagant encrypted style. In what has been denominated "prosecuted literature", there are hybrid textual types of whose function there is no suspicion. In order to fill the gaps of memory one must pay attention to discursive genres that masquerade as other discursive genres, it seems it is a complex communication strategy that overruns the political or social criticism: under a coded language, it holds the intended transmission of a knowledge of elites. In several occasions, science has drawn near to metaphor and myth, which is why it is difficult to place the story only as a literary manifestation, its scientific content overgrows classifications and compels the redefinition of the notion of literature as a historical configuration, since only time can decide the fate and death of texts, and not institutions, nor the very authors.

In an attempt to unveil the secrets of the manuscript to inscribe it in a history of trips to the Moon in literature, the essays hereby assembled traverse the landscapes of heresy and the avatars of prosecuted literature; Hermetic traditions and imaginary voyages; scientific discussions and fiction in science; the discursive traditions and their implications in the notion of literature. The diplomatic edition of the manuscript was published in 2010, along with the almanac and the lampoons in Maya (the main cause of censorship), and now we offer the English translation of the Booklet narrating the trip to the Moon.

Heretic or enlightened one?

> Esse ens chimericum, Xptum non subesse spciebus panis, et vinis teesse hostem implacabilem B. M. V. et om nium Sanctorum; Deum propter justitiam suam pecatoris misericordiam denegare, qua proptor nemo exfratibus Criollis Salvator; te esse scandalo secome et onis herecis labe infectum; et denique te esse denuntiatum ad S. Fidei Tribunal Mexicano.
>
> WORDS OF P. GRANADO
> DE BAEZA FOR WHICH HE WAS ACCUSED
> before the Inquisition by Lorenzo de Azucedo in 1773[2]

> The meaning of the notion of error is wider than the one of heresy, for if every heresy is a mistake, every mistake is not heresy. And if every heretic is mistaken, any who is mistaken is not necessarily a heretic. Yet in the sphere of faith, heresy and error are perfectly synonymous.
>
> NICOLAU EYMERIC, Handbook of the Inquisitor

The enlightened diffusion

The word "heretic" bears a triple meaning: the one who chooses, the one who adheres, and the one who is divided from common life; a heretic is, then, one who, when facing the choice between a

2 Annex letter in the file against Rivas. Record 1187, vol. 2, Inquisition repository, AGN, sheet 146.

true doctrine and one that is false, chooses the false one.[3] The juridical meanings of the qualifier 'heretic' include the excommunicated, those affiliated to sects, those who do not accept the sacraments, anyone who commits mistakes in the explication of the Holy Scriptures…in summary, "one who differs with the Church of Rome." Although heresy was defined by theologists, jurists were the ones who judged the crime, hence the great variety of cases that received the adjective of heresy, since under that denomination the inquisitors hid an "enormous variety of, socially and politically dysfunctional, perceptions that had little or nothing to do with dogmatic orthodoxy."[4] The tribunal of the Holy Office was created in 1478; it was managed by royal power with the object of social and political control, thus the prosecution encompassed the disfunction conditioned by precise historical moments: the dissipation of the Judaist heresy, the eradication of the Moorish, the contention of Protestantism, ending superstition and witchcraft and, of course, having moral control over Christians by means of surveillance of their moral conduct (offenses such as sodomy, bigamy and blasphemy, among others, were also prosecuted). In the XVIII century the prosecution was oriented in other directions; "free thinking, masonry, certain forms of Jansenists were prosecuted",[5] which announces the historical juncture that, added to the internal faults, almost led the tribunal to its end: The Age of Enlightenment.

The Enlightenment movement has an inherent impetus in the ideal of reason as an unfolding (progress) and power. The immediate precedents of this movement are the Renaissance humanism

3 Nicolau Eymeric, *Manual del Inquisidor* (expanded and adapted by Francisco Peña in 1578), the edition in Spanish *El Manual de los Inquisidores,* Munchnik editores, Barcelona, 1996, p. 57.

4 Jaime Contreras, *Historia de la Inquisición Española*, Arco/Libros, Madrid, 1997, p. 29.

5 *Ibid*, p. 31.

(that would later resurface in France with the libertine movement),[6] the Cartesian form of Leibniz' [7] philosophical analysis and synthesis (that inverted the methodical hierarchy and favored the phatic and its mathematical determinability), which provided the expansion of lay culture inherent to natural scientific thinking whose representatives would be Kepler, Galileo and Newton.[8] This background, added to the controversy of Protestantism, gradually expelled the scholastic[9] tradition, and the idea of truth as a revelation was substituted by observable and demonstrable truths. Although it is claimed that the Enlightenment properly began in England with Hobbes, Locke, Hume and franc masonry, it was France its great broadcaster in Europe, given that French was the common tongue in the cultural circles; the *Reasoned encyclopedia or dictionary of the sciences, the arts and the offices* was composed there, under the direction of Diderot, in which D'Alembert, Voltaire, Rousseau, Buffon and Condorcet, among others, collaborated, and which would be condemned by the Church in 1758 and 1759 because of its ironic and satirical notes about matters of religion: "Since the beginning, the revolutionary ferment that existed in the Age of Enlightenment was also understood by the established powers as a potential danger, that was revealed later as very true for certain classes and social groups."[10]

6 "The word libertine […] was used to name the follower of a philosophical current in the XVIII century, who, leaning on the renaissance naturalism, sckepticism and the moral of Montaigne, vindicated the freedom of the individual before any authority". The Libertine movement is a "circle of intellectuals around the philosopher Gassendi: among the best known were François la Mothe Vayer, Gabriel Naudém, the writers Cyrano and Molière." Marc Cheynol, "Los dos Cyranos" in: Cyrano de Bergerac, *El otro mundo*, Conaculta, Mexico, 1992, pp. 11-13

7 Ernst Cassirer, *La filosofía de la Ilustración,* FCE*,* Mexico, 1981, p. 52

8 *Ibid*, p. 23.

9 Daniel Olmedo, *Historia de la Iglesia Católica*, Porrúa, México, 1991, p. 536 and Jesús Álvarez Gómez, *Manual de Historia de la Iglesia*, Publicaciones Claretianas, Madrid, 1987, p. 260.

10 Fernando Savater, "Censura en la Europa ilustrada", in: Xosé Luis Barreiro, Luis Rodríguez Camarero and Martín González Fernández (coords.), *Censura e Ilustración,* University of Santiago de Compostela, 1997, p. 23.

In the face of the Age of Reason, there was a natural defensive reaction of censorship. Repression was at its strongest in some countries more than in others: to prevent the entry of new ideas into Spain, the Tribunal of the Inquisition emitted edicts for the prohibition of books; in spite of the unyielding surveillance, the ideas that prevailed in Europe made way, and the works of French encyclopedists were widely known. Among the indexes of forbidden books, one could find titles by Luther, Erasmus, Voltaire, Deffoe, Bayle, Descartes, Newton…whatever was forbidden by the metropolis, was also forbidden in the colonies. In the Hispanic America, however, denunciations about the reading of Descartes in 1743, Newton in 1760, Leibniz in 1783, Locke in 1727, Voltaire in 1765, Raynal in 1774, Condillac in 1778 and Malebranche[11] in 1727 appeared, and if it is taken into account that the dates are the ones of the denunciation, it is unquestionable that they would circulate beforehand. Conversely, in the General Archive of the Inquisition of Mexico (AGN) some testimonies of the impact these works[12] had are kept, such as the contributions of Voltaire, Rousseau, Condillac, Fontenelle, and the reflections on the subject of some of these authors, for instance, the one about Fray Antonio Blanco Valdés: *Dissertation about the philosophical currents of the XVIII century and the systems of Descartes, Gassendi and Newton (1778).*

To enlighten oneself is to become a foreigner, to "universalize" oneself, and books were the instrument of diffusion: booksellers, the civil patronage; the pocketbook, among others, contributed to the consolidation of the enlightenment project. Writing was the

11 Monelisa Pérez–Marchand, *Dos etapas ideológicas del S. xviii en México a través de los papeles de la Inquisición*, colmex, 1945, p. 25.

12 María Águeda Méndez, Fernando del Mar, Ana María Morales, Marxa de la Rosa, *Catálogo de textos marginados novohispanos. Inquisición: siglos xviii y xix,* AGN, ColMex, UNAM,Mexico, 1992.

medium of circulation and exchange of ideas between countries. Books where printed mainly in Paris, Holland and Switzerland, although on occasion it proves difficult to determine the place of edition, since many stratagems where used in order to divert censorship and confuse the police, for instance, using fake places, such as Istanbul and Pekin,[13] which are very unlikely centers of edition; in other cases "a very vague and common name (Donjon du Chateau)" was used, "sometimes an imaginary city of an ancient Greek name (Veritopolia) that already constitutes a message itself (Veritopolia, City of truth, Siboris or Sibaris)."[14] Censure caused certain modifications to the edition data, and even beyond, it brought about alterations in clandestine literature, that was distorted by booksellers (who edited the books at the time) due to the lack of normativity, consequently the versions that circulated as anonymous where sometimes compilations of various texts (even of different authors) which led to the discontent of the original authors, as happened to Montesquieu and Voltaire.[15]

The arrival of the Enlightenment to New Spain was conditioned by its dependence to Spain, where a great number of printings were made as well. In the 264 edicts promulgated by the Tribunal of the Holy Office in Mexico between 1576 and 1819 there were 2 018 book prohibitions, and 95 percent of them were made in the period from 1740 and 1819.[16] The inquisitorial activity of the XVIII and the beginning of XIX centuries reveals a political concern:

13 In the study of the edicts emitted by the Inquisition of Mexico they appear at least once as places of edition, among others, Ethiopia, Lima, Krakow. On the matter, consult José Abel Ramos Soriano, "Los orígenes de la literatura prohibida en la Nueva España en el siglo xviii", in: *Historias*, number 6, INAH, México, April–July 1984.

14 José Abel Ramos Soriano, "Los orígenes de la literatura prohibida en la Nueva España en el siglo xviii", in: *Historias*, number 6, INAH, México, April–July, 1984, p. 27.

15 Consult: Miguel Benítez, "De arte compilatoria: la manufactura de manuscritos clandestinos", in: Xosé Luis Barreiro, Luis Rodríguez Camarero y Martín González Fernández (coords.), *Censura e Ilustración*, p 42.

16 *Ibid*, p. 27.

The *Catalogue of marginalized Novohispanic texts* project of the AGN, edited in 1993, "shows nothing less than the imposing mass of two hundred and twelve censured texts and that directly refer to ideas and events of France."[17] This political interest had already been proven by Monelisa Pérez-Marchard,[18] while observing in the edicts and censures a "significant phenomenon of terminological change", which she interpreted as the ideological evolution of a century that makes way from the colonial to the independence, an evolution divided in two stages where the religious interest of the American man is displaced in favor of the socio-political interest. The inquisition, which at first took care of the protection of faith, then had to take charge of the protection of the socio-political order: if in the first decade of the XVIII century the works were generally of pious nature, in the fourth decade there was a noticeable rise in censorship and more philosophical, scientific, and subsequently, political texts began to appear.[19]

From this perspective, the XVIII century is represented as a struggle for the conservation of the religious order in face of the Enlightenment movement that was advancing from the various forms of fraudulent circulation to the libraries. In the Age of Reason, the reading and editorial activities increased in a prominent way; the first modern and public libraries appeared;[20] in turn, the convent libraries were expanded and reorganized.[21] Another space in which

17 María Águeda Méndez, *Secretos del Oficio. Avatares de la Inquisición Novo-hispana*, ColMex–UNAM, Mexico, 2001, p. 53.

18 Consult: Monelisa Pérez–Marchand, *Dos etapas ideológicas del siglo xviii en México*.

19 *Ibid,* p. 59.

20 Alberto Saladino García, *Libros científicos del siglo xviii latinoamericano,* Autonomous University of the State of Mexico, 1998, p. 56.

21 "The Franciscans compiled 7987 books in twenty-nine convents in the year 1723, which incremented throughout the years, seen as the libraries in the convents of San Francisco in Mexico possessed 9488 in 1770 and the one in the convent and Apostolic College of San Fernando, founded in 1731, reached the quantity of 11549 books in 1801. The Augustinians, Dominicans, as well as other mem-

the change of mentality can be clearly observed is in the transformation of lectureship: Sor Juana Inés de la Cruz, Carlos de Sigüenza y Góngora and fray Diego Rodríguez, began to draw closer to modern science. Rodríguez, professor of astrology and mathematics in the Royal and Pontifical University of Mexico in 1637, introduced the theories of Copernicus, Tycho Brahe, Kepler, Galileo, Gilbert, Lansberg, Magini, Cardano, Clavio and Neper, among others.[22]

> From the methodical doubt of Descartes, to the laws of universal gravitation of Sir Isaac Newton, to the experiments of Franklin with electricity or the more recent developments in the field of hydraulics, there was barely a problem that was not treated or checked in some […] exam during the second half of the XVIII century. The colonial professor turned at least 95 percent of students into moderns without the need of a dependence on forbidden books…[23]

During the XVIII century this transformation of methods and texts in lecturing gained momentum, which fostered the increase of disputes between scholastic and modern ones, until the latter managed to impose a conception of science that would have implications, not only in the order of knowledge, but also in political and social matters. Hence the concern of the Church for safeguarding and seeking to maintain the established order that made the Holy Office face forms of "heresy" that are difficult to classify.

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bers of the regular clergy had bibliographical riches, however they were overshadowed by the Jesuits, particularly because of the priority they gave to education." According to the data obtained after the expulsion, the number was greater than 40 thousand volumes. Only in the libraries of *Colegio Maximo de San Pedro y San Pablo* there were 30,766 volumes. *Ibid,* p. 57.

22 Elías Trabulse, *Historia de la ciencia en México,* FCE-CONACYT, Mexico, 1997, p. 72.

23 John Tate Lanning, *The Eigteenth–Century Enlightnment in the University of San Carlos de Guatemala*, Cornel University Press, 1969, quoted by Jaime E. Rodríguez in: *La independencia de la América española*, FCE-COLMEX, Mexico, 1998, p.64.

A process by "propositions"

Volume 1187 from the repository of the Inquisition of the AGN begins with a denunciation[24] made in 1783 by Antonio Brito against Antonio Maldonado for the crime of heinous sin[25], which motivated the reopening of the record of a previous process formed in the years 1775 to 1777, according to the inquisitor Bergosa[26], against fray Manuel Antonio de Rivas

> In case therein figures something against, or in favor of Father Maldonado, and for the clear idea that the pitiful state of that religious province offers, and the little credit that can be given of its religious ones in such denouncements and testimonies by the spirit of disunity, and partiality that governs them, and even because of the relaxation that is observed in most of them: and only finds that it can be conducive for the record that must be formed against Father Maldonado the pasquinade that came out to the public in the town of Tehas, respecting the incontinent conduct of Maldonado; and the warning that was said against Rivas in a statement of seven pages various points and offences belonging to the jurisdiction of the Holy Office.[27]

In 1773 Manuel Antonio de Armas had accused Rivas before the Holy Tribunal by "propositions"[28], claiming another denunciation against him had been made six years ago and that it had been forgotten "because of human respects" and was judicially reported by

24 Rec. 1187, vol. 2, Inquisition Repository, AGN, **s.** 6.

25 Sodomy.

26 This fiscal inquisitor from Mexico appears described as an in inept in José Antonio de Rojas' autobiography, which was forbidden by the inquisition and which González Casanova transcribes in *La literatura perseguida…*

27 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 7

28 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 13–14.

fray Jerónimo Franquis in a letter with date of 1768 (that appears in page 129, record AGN) written *in articulo mortis*, in which he is accused of over examining women in the confessional booth and about certain scandalous "proposals" (letter whose authenticity was denied by Rivas). Supposedly Franquis died in a convent 15 leagues away from the city,[29] besides, the letters *in articulo mortis* were a common strategy to make a denunciation while avoiding the witness' presence. Among the accusations, Manuel Antonio de Armas related that on one occasion they found on him a paper where Rivas denied the existence of purgatory, that he said compromising things about the adoration of images and that creole religious people damned themselves for saying mass in mortal sin, but the main allegation was that he had written some pasquinades in Maya with faked handwriting "whose content where the diabolical doctrines of John Wycliffe and Jan Hus,[30] assuring the Indians in very indecent terms that no priest that was in mortal sin made any sacrifice, absolved nor baptized."[31]

The term "proposition", under which Rivas' infringement is consigned, is somewhat ambiguous, since it is understood as a heretical proposition, that is, against the doctrine, although the type of heresy is not specified. In an investigation about the archives in the Inquisition in Galicia, Martín González found numerous processes classified under this rubric, which he interprets as a sign of dissent or deviation of thought.[32] In light of the unclassifiable heterodoxy, the inquisitors tried to name that which did not belong with traditional heresy, hence the confusion and inaccuracy of this

29 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 149.

30 Heresiarches whose ideas, along with Protestantism, contributed to the great schism of the XVI century.

31 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 13v.

32 As verified in the inventory of processes followed during that century, made by Martín González Fernández, "Cartografía del mal", in: Xosé Luis Barreiro, *et al.* (coords.), *Censura e Ilustración*, p. 158.

denomination. Among the heresies that the Holy Office condemned in New Spain during the XVIII century these new manifestations appeared, product of a cosmovision that distanced itself more and more from religion. They tried to place fray Manuel Antonio de Rivas among the protestant heresies, as testified by Lara and Armas: "He practiced the opinions of Wyclift and Juan Hus". While there could be some similarity in the author's thinking to the doctrines of Wycliffe (like his opposition to the sacraments and the adoration of images), in addition to the strange reference to the Anglican Swinden Tobias, who wrote *An enquiry into the nature and place of hell* (included in the index of forbidden books by the Inquisition), what would have more in common with these heresiarchs is his reaction to a silent and distant social climate, paired with the fact that other influences predominate, like the French one. It is without doubt that fray Manuel Antonio de Rivas had access to illustrated knowledge, whether it was through books or friendships. In addition, this Franciscan came from a Spanish province, Galicia, that was a focus of penetration of the Enlightenment in the country[33] and, as can be noticed in the process against him, he kept close relationship with characters from Spain.

> Lastly, the aforementioned declaring Reverend Father said that there has not been an omission by the members of this Province, San José de Yucatán, not having punished the aforementioned Reverend Father fray Manuel Antonio de Rivas for his declared excesses, although many have attempted, it has not been effectuated, in occasions for being ill, in others for receiving aid by first class and powerful people. For which they have restrained

33 *Ibid*, p. 156.

> themselves, so as to avoid major inconveniences and turmoil, although this does not impede that Rivas has been admonished, warned and reprimanded by the rest of the members, to an end in which everything expressed was to be contained and mended, his character as mischievous and restless genius, with no hope of correction has been acknowledged.[34]

The pasquinade in Maya that was the cause of the denunciation contains many deprecations together with the names of the priests that do not keep their vows, among which Maldonado appears, reason why the record was reopened six years later to confront his information to Brito's denunciation. In the accusation to Rivas as the author of the libel, the heretical propositions that the pasquinade could have contained (which did not undergo any assessment) were left aside, so as to focus on the behavior of the accused, who denied its authorship and attempted to offer proof in his favor and demonstrate that, according to the dates and to some witnesses, he was not in the town of Tehas when they were in circulation.[35]

The witnesses in the case (all religious except one) mentioned similar accusations to Armas', to which they added that Rivas did not attend the chorus nor he kneeled in Church, that he refused *in articulo mortis* the reception of sacraments, event of which a letter exists, written during his stay in the infirmary with the date of 1771; moreover, Fernando Murciano, who obtained the libels as evidence against him, attributed another letter to him that appeared eight months after the pasquinades (this is not in the record) addressed to the Mayor "written with a fake name that is a uni-

34 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 58.
35 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 148v.

versal detraction of the religious people in this province."[36] There were more neutral witnesses, such as Juan de Hicieza, who tried to defend Rivas against the attacks of Andrés Montero, that even blames him for the condition of discord that reigned that province:

> It is indeed true that I do not know, nor have I talked with the accused R.P. Rivas, yet I have generally heard about his voracity and caustic style; reason for which he is commonly feared and badly seen by the religious, to which can be added some or much lack of respect and obedience to his superiors, source of contention in his religion, as with the present in which we find the province, divided into bands and partialities that forced their high general, or general commissary of *Indias*, to determine and send a religious Commissary from the court of Madrid, so he could come soothe these concerns and preside this chapter.[37]

The truth is that Rivas as well as his enemies blamed each other for the same thing: being promoters of discord and slander. In the documents, the conflict in the province is constantly mentioned, manifested in the license of customs and fractions among the Franciscans.

When it was demonstrated that Rivas had not written the pasquinades "with a fake handwriting" (later they would claim that he had an accomplice, the missing Antonio Quintero) the trial was focused on challenging and censoring a character that questioned the church's faith as well as the conduct of its representatives. There are many versions about fray Manuel Antonio de Rivas that contradict one another: the ones that say he was badly seen

36 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 40.
37 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 17.

and feared because of his caustic style and those which claim that everything was but slander. Among these perceptions, scarce data appeared about his education and origin: Rivas was an ex-student of Alba de Tormes,[38] he had incorporated to that province since more than thirty years ago from that time (in another document it is claimed he entered the province on May the second, 1702),[39] although he was a "son" of the province of Santiago de Galicia,[40] he wore glasses, was a mathematics enthusiast, he conversed about stars and heights of oceans and, most importantly, was an ex definitor and delegate of the general commissary of *Indias* fray Manuel de la Vega,[41] who had entrusted him the task he was precluded of doing by being a prisoner of the Holy Office. There are even documents that testify the payment of a financing to attain Rivas' freedom and where Pedro de Mora y Rocha, commissary of the Holy Office in Merida, shows the political nature surrounding the process: "I must tell you: that every reason of denunciation that is supposedly made against Father fray Manuel Antonio de Rivas, has been the fear of his adversaries that he succeeded in obtaining the government of the province, for being an intimate friend of Bernardo Leon y Valdez."[42]

Rivas, that character who "divides everyone with his hellish tongue", possessed the protection of the governor, and other "powerful" people. Maldonado complained about why he "informed or wrote to Spain to someone, next in charge to a superior, things that even here are secret and maybe he only knew due to

38 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 64.
39 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 158.
40 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 82.
41 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 64.
42 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 19–19v.

private notification of his henchmen".[43] To what was said it must be added the curious similarity in the testimonies of his "critics" and Juan de Hicieza's letter[44] in which he claimed that Juan de Lara had the intention of compelling him to give a fake testimony against Rivas. It results evident that the motives of the process lie more with political reasons than in religious ones. In the appearance of Jerónimo Leal de Salas,[45] it was clear that the real cause of the conflict was the litigation[46] for the government of the province, between Rivas and Maldonado. Little can be reconstructed of this history of disputes for power and conflicts in the religious orders, only hints remain through the divided testimonies that, in their moment, were kept under anonymity. The nature of the inquisitorial process (secret, silent, anonymous) and the very institution subtracts prominence to these characters, heroes or covert heretics.

The accomplice reader

The process took another route when Antonio Maldonado (at the moment as a notary of the cause) presented the booklet entitled *Lunar syzygies and quadratures adjusted to the Merida of Yucatán meridian by an anctitona or denizen of the Moon, and sent to the Bachelor Don Ambrosio de Echeverría, tuner of funeral Kyrie in the Parish of Jesus of said city, and to the current professor of Logarithmic in the Town of Mama of the Yucatán Peninsula, in the year of the Lord 1775*, along with a paper in which he himself certifies that Rivas spontaneously acknowledged its authorship and distri-

43 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 76.

44 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 154v.

45 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 45.

46 Jurisdictions in which the Franciscan order was divided, the provincial legislator is the religious practitioner who has the administration and superiority over all the houses and convents in the province.

bution. Miguel Urqui made the formal denunciation in 1774 so that it would undergo the qualification for containing "formal or exemplary" heresy.

The assessors, Francisco Larrea and Nicolás Troncoso, analyzed the paragraphs submitted in 1776 by Matías López for theological censorship, that refer to the idea by someone called Swinden[47] that Hell is situated in the Sun and that the stars influence the personality of the people from Yucatán expressed in the following paragraph: "[…] since it states that the vertigo or lightheadedness, that they suffered because of the temperament, constellation or influence of the Stars, the denizens of that place were at the mercy of a need of giving in to inept vices, and of practicing sinful acts produced by them".[48] The proposition related to the placement of Hell is sought to be contested with the resource of authority: according to the Holy Scriptures there is only one Hell and "placing Hell in the sun is close to ancient heretics who Seraphino Aporreta mentions in his appendix".[49] The assessors resumed their argument to authorities such as Doctor Angelico and San Agustin, since some, because of a "misinterpretation" of his phrase *aer caliginosus est quasi carcer demonibus, usque ad tempus judicis*,[50] claimed that there were several Hells.

Against the idea of climactic determinism, according to which the weather exerts a decisive influence in the character, customs, laws and politics of nations, and that was common at the time (it is enough to remember Buffon, De Pauw and Robertson, who

47 A supposed Anglican, of whom I did not find any reference. Thomas Suvinerton (also known as Swinden) appears in the *Índice último de los libros prohibidos y mandados expurgar para todos los señoríos del católico rey de las Españas*, Madrid, Don Antonio de Sancha's press, 1790, p. 260.

48 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 110v.

49 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 109.

50 "Air is somber as a demon's prison, with no interruption until the time of judgement".

based their hypotheses in travelers' tales without even knowing America, and that spread a series of prejudices about America and its natives),[51] Larrea and Trancoso oppose the argument of free will: "were the very human acts under whichever influence they received from the stars, not some would be worthy of award nor praise, neither others would deserve punishment and disdain".[52] The supposition that the climate influences men would be retaken and asserted in the defense of Diego Marin de Moya, *Dissertation about the apologues concerning the qualification of the work of Manuel Antonio de Rivas (*1777*):*

> The good without the grace of Jesus Christ is greater in some, and is manifested in some more than in others, because the weather, the temperament, the air breathed, the water drunk, the delicacies eaten, the people dealt with, and the objects perceived, have a certain power over our solids and our humors, that dispose them or set them in a more proportionate tone for vices, in whose verification much could be said.[53]

To conclude that the paragraphs submitted for qualification do not merit technological censure, Diego Marín Moya focuses mainly on justifying the utility of the apologues "that by faked things the true ones it means",[54] he also tries to refute the arguments of the qualification concerning the location of Hell by the use of the Copernican hypothesis of how the Earth moves around the Sun; this one can be as in the lowest point in the universe as in the highest.[55] Most

51 David A. Brading, *Orbe Indiano*, FCE, Mexico, 1991, p. 463.
52 Some pages of the classification are missing and this argument rests incomplete.
53 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 123–123v.
54 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 121v.
55 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 122v.

importantly, Diego Marín de Moya knew that no one can be judged on the basis of a work of fiction, just like the inquisitor Pedro de Bergosa who in a document with the date of 1776, addressed to the commissary of the Holy Office in Mérida, ordered him to set Rivas free in disposition of the Tribunal of the Inquisition in Mexico.[56] In a different document with the same date, the inquisitor Mier ordered a second qualification and he highlighted a very important detail that allegedly some failed to understand: they were in the presence of fiction–a literary text–, which is why he established that the analyzed paragraphs could be heretical in the literal sense, yet it

> deserves very special attention as a subject that the author proposed himself in the idea of a pastime, recreation, making false suppositions, with no bias by the Catholic religion, which it is not credible to imagine a religious person to separate from, nothing is vulgar in his Literature, and who by no means should be suspicious in the slightest; and as I previously noted, they deserve very little consideration by the complainer and any other religious person in the opposite party, who has aimed and aims to annihilate this friar, by any means for him to raise his head, directed by the partial spirit that his passions instill.[57]

According to Pablo González Casanova,[58] the inquisitors defended the fantasy, however, not so the supposed trends it implied, affirmation that this document denies, as well as the very dynamic of the process, and that it informs about the text's reception: who its readers were, and who the victims of the satirical irony were.

56 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 113.

57 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 115–115v.

58 Pablo González Casanova, *La literatura perseguida en la crisis de la colonia,* SEP (Cien México), Mexico, 1986, pp. 106–107.

The inquisitors (as well as the defense) knew that no one can be judged for a work of fiction (nothing more modern), in addition to their recognition of its literary value (which subsequent readers would not recognize), thus, rather than ignoring or disregarding the mentality they were facing, the inquisitors took sides.

In judicial hearing, Rivas was asked if the work was an apologue, which was stated in the booklet *Lunar Syzygies and quadratures…* concerning a troop of 400 demons which took the soul of a materialist from Yucatán to the Sun, to which he replied: "[…] it is a fable or a lucid ballad, only to attract the kind of the Anglican Swinden who on a whim decided to put the place of the damned in the Solar globe."[59] Rivas admitted being only frolicking, and his way of answering went along always with an ironic tone; further on, he spoke about the great theatre of the world, in which the very disorders have always been presented, so he used the resource of aiming

> against beings (inhabitants of the Moon) whose existence is ignored, searching for the opportunity to reproach the Earthlings or inhabitants of the Earth, and taking by (fake) medium the vertigo or lightheadedness that we, denizens of the Earth, do not experience: just as one who uses an apologue so as to explain a morality.[60]

Rivas' purpose was to refer and express his criticism in such a way that it went unnoticed by censors, but not by everyone else. In other letters (after knowing about his denunciation to the Holy Office) the attacks against his "slanderers" are more direct: Murciano, Armas, Baeza and Juan de Lara y Franco, primarily, who he accuses of fraud, of depriving him of his commission and of intending to make

59 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 118v.
60 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 119.

López Hicieza certify that Rivas practiced sodomy or bestiality.[61] It was even in a more direct manner when he described that the visitor Bernardo Leon Valdes "found abominations which cause horror to describe in this province": Lara practiced sodomy (he referred that it was since 1748, and that a process was being formed), Murciano was an incestuous statutory rapist in first and second grade, someone named Carceres was a libidinous person and a gambler, Baeza was in concubinage in Tekas and Motul (he signaled names), and Diaz was in a de facto relationship with Baeza's sister.[62]

One would have to search for the targets of the criticism in the text that circulated as anonymous, yet its fictitious quality makes it difficult to distinguish between real characters and ones created by Rivas, that in the Judicial Hearing he revealed he wrote in code and that only he (or only some) knew the way to decipher the meanings: "it will be rare one who understands the mention of *materialist*, whose name or place of death are never mentioned in the text".[63] In a draft written by Rivas, the designation materialist appears, associated with a "turbulent and mortal enemy",[64] fray Juan de Lara y Franco:

> In this party, in the convent of Ticul, he showed that it is a specific materialist, one who does not profess any religion, that for him it is but a fable and vain terror the eternity of penance: one who is not of pure blood, but rather it is poison what circulates through his veins; and that his malignity surpasses that of infernal spirits.[65]

61 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 151–153.
62 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 145–145v.
63 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 118v.
64 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 152.
65 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 95.

The fragments of this incomplete file enable the reconstruction of some indications that suggest that what was at play was not the Franciscans' reputation exclusively, and that the process was not abandoned due to the lack of evidence as Gonzalez Casanova believes, and that the denunciations against Rivas had sometimes "faded into oblivion" because he had the protection of important people (the inquisitor Bergosa and the visitor Bernardo de Leon Valdes), he was a prisoner of the Holy Office only hypothetically. Because of his condition of denounced to the Holy Office by "request of his enemy," Manuel Antonio de Rivas was not declared a provincial by that chapter and was forbidden to leave the province, he was designated unworthy of honorary jobs of his profession, and was kept away from the altar, according to what he himself expresses in a plead letter addressed to Bergosa with the date of October 1777, year in which the Holy Office had "gone easy on him" in this matter.[66]

66 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 73.

Mute texts

> Our science is like a part of Kabbalah: it is not to be taught clearly unless by word of mouth. Even philosophers have only discussed it betwixt enigmas, metaphors, allegories and misleading terms: it would be recognized as in Pythagoras' silence as in his writings.
>
> AEDIS DE VADIS

Stories within stories

A secret is more revealing the more ambiguous and ephemeral it is. The will of the secret does not always respond to stealth, if anything it is a way of being in the world where the "unhiding" of truth only leads to the continuous abyss that any knowledge generates. Any exegetical attempt lies in two ways of assuming that truth: as an adequacy (Graeco-Latin rationalism) or as *mutis* (Hermeticism). From the rational perspective, to know is to comprehend the causes, and truth depends on the principle of non-contradiction, whereas from the Hermetic perspective it is possible that many things are truth and at the same time they contradict each other,[67] so every word is an allusion, an allegory, and the truth is said obscurely. Thus, in mythology or in literature (that are nothing more than the same if we recall the meaning of the latter) which are held up by metaphor and fiction, every truth is valid, unlike in science which, anchored to rationalism, discards

67 Umberto Eco, *Interpretación y sobreinterpretación*, Cambridge University Press, Madrid, 1992, pp. 37.

the polysemy of language. Yet even modern science owes much of its conformation to fantasy and its formulations still contain that ambiguous component that it purports to eliminate. Fiction, then, more than a mere didactical resource, more than a way to test the prospective (science fiction), can be the place in which knowledge is produced and the means to enunciate it as well, hence the existence of traditions whose transmission strategies mark a discourse that hampers the distinction between science and literature.

Manuel Antonio de Rivas' manuscript could be a testimony of knowledge that in his time was secret, since the author, concealing himself behind the voices of others, reorders symbols: the literary voyage serves as a pretext for turning the usual into strange, that is, in order to see its contradictions and paradoxes from a distance. The strategy conditions the form, the supposed heretic is no such thing, rather a symptom of the confrontation between rational thinking and a religious vision of the world where the truths of faith are displaced by a knowledge that rests in experimentation, and the French voyager, the protagonist of the tale, sees to test the possibilities of a new science during his flight, which reveals a very illustrated pursuit. Nevertheless, the work maintains prints from the baroque, as with the structure *mise en abyme* (stories within stories) and polyphony, it even contests the definition of literary genre, since in it participate the epistolary, satire, the almanac and the philosophic tale (it is worth to highlight Voltaire's noticeable influence). This baroque style and cryptical ethos suggest that it is a coded text, in such a way it can be understood only by some, and has a purpose that stands out among others: the diffusion of clandestine experiments; though it does not only have the intention of communicating a series of scientific ideas, but also to deliver considerable criticism against the inquisition and against some

characters of the time (in the process against the author the targets of the satire can be detected).

Lunar syzygies and quadratures… must be integrated, not only into the history of Novo-Hispanic literature, but also into that of science; though it is not possible to rewrite any of these stories without considering the close relationships between philosophical, scientific and religious ideas that permeate the vast universe of knowledge and that condition the cultural practices. In order to write (or record into) a story of mentalities, cultural or scientific, it is required to trace the horizon of expectations around knowledge, because the past moves as we move towards it. Visions or versions about wisdom are measured by an epistemology ruled, in turn, under the imperative of building the plot of know-how as a progressive line, with the sole purpose of rendering an account of the correlation and suppression of theories or paradigms; hence the existence of unexplored sectors (like the Hermetic traditions) that were not considered science[68] in the historiographies of positivist approach. Among epistemological discussions in the beginning of the XX century, it had been concluded that it was necessary to examine how scientific premises are constructed, how the conceptual universe of a theory is articulated to attain the construction of unequivocal metalanguages (through the formalization or creation of international nomenclatures), although it is forgotten in occasion that science has approached poetics and its discourse can be full of metaphors and allegories: there is always room for myth.

Before speaking about science in the modern sense, it is convenient to emphasize that at the end of the XVII century the term designated "any properly constructed body of knowledge […]

68 Elías Trabulse, *Historia de la Ciencia en México,* FCE-CONACYT, Mexico, 1997, pp. 16–17.

whereas research on the kind of things that existed in nature and on the causal structure of the world received the names of natural history and natural philosophy, respectively;"[69] and it was not unless under the influence of the Enlightenment when history became one of the "progress of the human spirit" and the history of the "sciences"[70] figures in as an independent discipline; which is why a category of the XIX or XX must not be applied to forms of knowledge previous to science as it is currently conceived. In this sense, in the case of Mexico, three great schools or kinds of scientific mentality are discussed, which were interrelated: the Organicist,[71] the Hermetic[72], and the Mechanical,[73] which differ from each other in their language resources, that is, for the terms used by each of the "scientific groups".[74] Said groups or communities are distinguished not only for their role in the terrain of science, but also for their political implications, since they were spaces where "new forms of sociability"[75] took place, that set the guidelines of the cultural change that preceded the Hispanic revolutions. The tertulias and patriotic societies where gatherings of informal character between family or acquaintances ("they were integrated by special groups,

69 Steven Shapin, *La revolución científica*, Paidós, Barcelona, 2000, p. 22.

70 Alexandre Koyré, *Estudios de historia del pensamiento científico*, XXI century, Mexico, 1991, p. 379.

71 Organicism is the tradition linked to Aristotle, *Organon* was the collective title given to the collection of works of Aristotelian logic.

72 From the Greek God Hermes, subsequently transformed into Hermes Trismegistus by Egyptian Gnosticism, "the thrice-greatest", considered the father of alchemy.

73 Mechanism takes its name from the Mechanical philosophy of its predecessors, who regarded the functioning of the universe and everything within it as a machine.

74 The sources of his research were "scientific and technical texts themselves, weather printed or handwritten; documents from the archive […] particular correspondence of the scientists, historical chronicles, periodical publications, bibliographic catalogues and several types of manuals". Elías Trabulse, *El círculo roto,* FCE/SEP, Mexico, 1984, p. 14.

75 See François–Xavier Guerra, *Modernidad e independencias. Ensayos sobre las revoluciones hispánicas,* MAPFRE/FCE, México, 1993. According to Guerra, the "complex" relationship between the French revolution and the Hispanic revolutions can be mapped parting from the analysis of the Geography in modernity in the Hispanic world, specifically the "tertutlias" and patriotic societies.

such as university professors and students, lawyers and members of the clergy"),[76] which were later institutionalized into scientific or literary societies, although some kept the name of tertulias since the informal nature protected them from intervention of the state and could continue discussing "hot" topics; yet, at the same time, their clandestine aspect implied they would leave few testimonies, it is only known that they used to have epistolary exchanges.[77] It is no coincidence then that *Lunar syzygies and quadratures…* is presented written as a letter. Besides, there is proof in the process against fray Manuel Antonio de Rivas that he participated in these kinds of gatherings: "he meets every afternoon in a house honored with a Mister general lieutenant, many wise clergymen and people of obligation to this city; in whose tertulia various points of chosen erudition are treated, honoring me with the opportunity of being heard in it."[78]

The cultural mutation or ideological change in New Spain prior to the independentist movement has been explained from what occurs in the elite (in the interior of the Inquisition),[79] and by the impact of the political project manifested in the Bourbon reforms, that on the other hand drove science, especially the scientific explorations of the territory with aims of control (population registers, hydrology, fauna, flora, climate, vocations). Thus, a political purpose became the motor of a knowledge that, paradoxically, would threaten that political power because of the change of mentality it implied. As Jaime Rodríguez points out with respect

76 *Ibid.*

77 The epistolary form was a common medium for scientific discussion in New Spain, which is the case in "Letter about Aurora Borealis" by José Francisco Dimas Rangel, and "From the quadrature to the circle" by Antonio de León y Gama. See: Elías Trabulse, *Historia de la ciencia en México*.

78 Rec. 1187, vol. 2, Inquisition Repository, AGN, no sheet number.

79 See: Monelisa Pérez–Marchand, *Dos etapas ideológicas del siglo XVIII en México*.

to the Spanish Enlightenment compared to the American one, in the former, the attention that the crown set "to science and reason gave rise to the intellectual climate that would lead […] to take new political ideas into account",[80] whereas in America these political ideas were crystalized into revolutionary movements. But everything begins with ideas, and the tertulias where the stage of the diffusion of light (the spread of Enlightenment).

Although Rivas belonged to an elite, and the content of the booklet and almanac he wrote is undoubtedly cultured, they circulated publicly and anonymously (as a libel) in the province of Yucatán, and seen as it can be appreciated in the inquisitorial process, it had a considerable impact in public opinion, witnesses are not only friars but people from the town as well, like the shopkeeper; nevertheless, the fact that the pasquinades were written in Maya suggests that the addressees of the letter were not the same as of the pasquinade, which was not subjected to theological censorship as the letter was, a testimony of the repression that some ideas received and of how they came into the light by means of literary strategies. In the *Catalogue of marginalized Novohispanic texts…* the tale of *Lunar syzygies and quadratures…* is classified as social satire, yet beyond that, it would be necessary to reclassify it as a scientific work that, because of censure, built communication artifices. It is a manuscript with a great number of intentions: making critiques, spreading information and, above all, mocking the very censure.

Given its prosecuted nature it is difficult to ascertain or measure the impact the tale (along with the almanac) had in the public opinion, but it describes, in its atypical condition, a representativeness of which happened in the tertulias, that besides made the

80 Jaime E. Rodríguez, *La independencia de la América española*, FCE-COLMEX, Mexico, 1998, p. 56.

ecclesiastic authorities uncomfortable, as it aroused controversy within the Franciscan order and in the people of Yucatán. Moreover, in the development of what was not a best-seller[81] in its time, it traced a complex chain of clandestine transmission in its era that came from Galicia (highly influenced by France) to the peninsula of Yucatán.

The strategies of a secret and a criticism can be unfolded through the reconstruction of the path of the author's reception, that is, the bookish circumstance (the influences, explicit and implicit in the construction of the imaginary voyage) in which the assimilation of the French ideas is distinguished, as in a palimpsest, and coat a baroque discourse. *Lunar syzygies and quadratures…* exists in the enlightened tradition of "scientific" expeditions and descriptions, as well as in the one of imaginary voyages, and in particular, voyages of knowledge like the "First Dream", as it shares with the poem a Hermetic influence. Alchemy has been situated in Hermetic tradition, as it implies peculiar ways to transmit knowledge, and on not few occasions it has employed the resource of fiction, and what at first glance would appear to be literature could very well hide other intentions.

Without leaving aside the importance of the political background that was revealed in the inquisitorial process, where fray Manuel Antonio de Rivas' opponent for the government of the province is involved as a notary, and where the pasquinades in

81 As a methodological approach to prosecuted literature the French historiography's contributions are essential, specifically those by Roger Chartier and Robert Darnton, who have been interested in the history of the book and prosecuted literature; they both share the same search: "In which way did the circulation of written texts transformed the sociability ways, made new ways of thinking possible, modified power relationships in societies of the Old Regime, between the XVI and XVIII centuries?" or "Do books cause revolutions?". See: Roger Chartier, *El orden de los libros. Lectores, autores y bibliotecas en Europa entre los siglos XIV y XVIII*, Gedisa, Barcelona, 2000, p. 24, and Robert Darnton, *The Forbidden Best–Sellers of Pre–Revolutionary France*, Norton, New York/London, 1995, p. 167.

Maya were consigned, that were explicit criticism in an obscene speech (with names and details) about the licentiousness of some Franciscan's customs, the conflicts within the Franciscan order, the disputes in the field of knowledge: heliocentrism and experimental physics infused with Hermeticism also stand out.

Hermetic traditions

Ora, lege, relege, labora et invenis

Parting from its basis, alchemy flows among the limits of art and nature, which has elicited divided opinions surrounding its legitimacy even in the current historiography. There are those who see alchemy as a pseudoscience and quackery, others establish it as a precursor to chemistry, while some consider it a religious or philosophical doctrine.[82] The origins of alchemy are not clear because of the many traditions that converge (Babylonian astrology, Egyptian mythology, metallurgy, Gnosticism, among others)[83] in the conformation of a knowledge that links aspects that go from the spiritual to the technical, or as Mircea Eliade asserted, esoteric currents and popular traditions.[84] It is considered that the alchemic tradition began in the western part of Alexandria, a place where Egyptian mythology, Babylonian astrology and Greek philosophy were fused, but it was until around the XII century when the Arabic alchemy was known in medieval Europe.[85] Places for alchemic

82 Hoefer in 1842, Koop in 1843, Jung in 1944 and Koyré in 1971.

83 In the Christian Roman world alchemy permeated through Muslim Spain. See Titus Burckhardt, *Alquimia. Significado e imagen del mundo*, Paidós, Barcelona, 2000, p. 20.

84 Mircea Eliade, *Herreros y alquimistas*, Alianza, Barcelona, 2001, p. 130.

85 William R. Newman, "Alquimia medieval–árabe", in: Claus Priesner and Karin Figala (**eds.***), *Alquimia. Enciclopedia de una ciencia hermética*, Herder, Barcelona 2001, p. 52.

knowledge in this period were convents (it is worth to highlight that specially the Franciscan ones); during the Renaissance and beginnings of the Modern Era there was a surge of alchemy due to the patronage of the courts, such interest prevailed even after the Scientific Revolution. In the XVIII century, the scientific academies kept on making alchemical experiments, albeit from a demystified perspective that made way to chemistry, nevertheless part of the esoteric tradition became a legacy of secret societies.[86] There are testimonies of the permanence of alchemy in Spain up to the XIX century, one of them is the compilation made by José Ramón Luanco, published in Barcelona in 1897 for a story about the Spanish adepts, that shows prejudice and a lack of knowledge regarding the aims of alchemy:

> Given that many believed that delusion, it seems to us a curious matter knowing which was their doctrine and the procedures that they followed to implement it, since there is no recollection of their pursuit that bore no other fruit than a sad and sometimes tardy disappointment.[87]

Rather than trying to defend or not alchemy's place within science, it is necessary to pay attention to the ways of transmission of this kind of knowledge, specifically to the transition of an oral, personal practice and a teaching that becomes a textual tradition, which would allow to clarify to what extent the knowledge that culminates in the image of an experimental science and its practic-

86 Claus Priesner and Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética,* Herder, Barcelona, 2001, pp. 43–63.

87 José Ramón de Luanco, *La alquimia en España. Escritos inéditos, noticias y apuntamientos que pueden servir para la historia de los adeptos españoles*, Printing by Redondo and Xumetra, Barcelona, 1897 (2001 edition, Valencia), p. 8.

es prevail from an oral substrate, and thereby, a very peculiar vision of the world. Apparently, the biggest secret of alchemy is not theoretical; what constitutes a mystery is the collection of practices, scientific and sacred, hence that the method of obtaining the philosopher's stone (with which it was intended to emulate the process of creation, to obtain the secret of life) lead to many legends about the making of gold, when, in the original sense, gold was the symbol of immortality , a metaphor of the "magical-religious" experience of the relationship of man with the substance, that is to say, of the technique that was able to replace the work of time.[88]

The access to this form of knowledge was, and is, almost impossible. Even though many treatises were written, the task was the systematic dispersion of knowledge; the texts had a double intention, to offer practical indications although in an "ungenerous" language that allowed the selection of the initiated: "I have described all science without keeping even the smallest part of it secret; the only enigma is its scattering".[89] The transmission of wisdom was almost always oral, from master to disciple, and alchemic literature had the intention of confusing the common reader, who once having started could only confirm if their interpretation was correct by performing the experiment in the laboratory. The book was conceived as a link in the transmission chain and the enduring reader was the one who managed to bypass the subterfuges that went from sibylline expressions, mystic allegories, fragmentation of the chronology, concatenation of causes and effects, to even fake recipes. Due to this cyphered language, alchemy's status as a science has been called into question, since it entails a vision of

88 Mircea Eliade, *Herreros y alquimistas,* p. 10.

89 Jabir quoted by Maurice P. Crosland, *Estudios históricos en el lenguaje de la química*, UNAM, Mexico, 1988, p. 59.

knowledge filled with religiousness and mythology, so it is not rare to find theological matters in an alchemical text (even the Bible was interpreted in alchemical code).

> In general, alchemists preferred the use of a language based on analogy and more suited for poetry or mysticism rather than one for exact science. Because of the wide use of allegory, it was not possible, on one hand, to clearly recognize an alchemic manuscript that referred to chemical reactions and it was possible, on the other, to read an alchemical meaning in allegoric works in which the author had no intention of any such interpretation.[90]

The secret language of alchemy had a variety of resources, like the anagrams and acronyms, which is why it was called the Gay Science (The Joyful Wisdom), since even the authors that created texts of infinite resonances employed fictitious names. Roger Bacon described seven different methods for hiding secrets: the creation of encrypted alphabets (randomly mixing letters from different alphabets like Hebrew, Greek and Latin), transposed letters, anagrams, numbers as symbols…[91] It is even spoken about the existence of a Hermetic Kabbalah (that resembles the Hebrew one for its polysemic, symbolic and allegoric expression), a hybrid system made with assonances that change the sense of the words, in such a way that in order to obtain the meaning one had to find the phonetic affinity with ancient Greek. This lack, chaos or excess of nomenclature led some (especially in the XVIII century) to consider all alchemy a hoax, but "if when observing a text, one begins to pay attention not to the signs, but to other patterns formed by its constituents, then

90 Maurice P. Crosland, *Estudios históricos en el lenguaje de la química,* p. 25.
91 *Ibid*, pp. 62–65.

a different perspective is opened: the possibility of other significant processes that act under or next to the text's manifested signs."[92] Thus, the enigma is not only the content but the reading key as well: How can one know which patterns to consider possessors of meaning in *Lunar syzygies and quadratures...*? How many senses does the text have? How can one distinguish strategies of satire from those of communication of a Hermetic knowledge? What if it makes irony of alchemy and/or experimental science?

It is considered that there are at least five mixed records in the coded language of alchemy: 1. chemical contraptions, substances and reactions; 2. chemical-alchemical indications in cyphered language (anagrams, nicknames, series of letters and digits); 3. The transportation of metaphors and allegories from one cultural context to another; 4. the misunderstood and the intentional paradoxes; and 5. the alchemical discourse in general.[93] It seems this language became progressively more complicated in its transmission process "in a way that the exegetical mistakes made in ancient texts are added to the ones made in more modern texts and these, in turn, are added to the erroneous interpretations of subsequent texts".[94] To this add the mistakes of copyists and translators that obscure the sources even further, as it is the case in the transcription made by González Casanova of the tale in question in which anagrams or pseudonyms such as "Remelttoin secretary" and "Suvvidin" can be located, that are reinterpretations of classic myths like Phaeton's or the Genesis, as well as numbers with letters and digits "132nW+," wordplays "Almana Kista" (the almanaquist, the

92 Jonathan Culler, "Hacia una lingüística de la escritura", in: *La lingüística de la escritura*, Visor, Madrid, 1989, p. 186.

93 Hans–Werner Schütt, "Lenguaje de la alquimia", in: Claus Pries- ner y Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética,* p. 294.

94 *Ibid.*

one who makes the almanac), "Hydron, Schthion, Cryon, Tauron, Dyaymon, Karkinon, Leonton, Pardienon, Zigon, Scorpion, Foxon, Ogon;[95] or more explicit mentions such as the "Aqua regia or strong water that did not dissolve gold" which refers to a metal transmutation operation. Indications that, along with phrases such as the following "[…] *I instructed Monsieur Desforges, as he so asked, in all rules, they could conduct the practice of the communicated secret,*" reveal an intention behind the fiction.

On another note, in the voyage to the Moon described by Rivas there are some matters of astronomy, along with an almanac of the year 1775. It is worth highlighting that Hermetic traditions have roots in astronomical knowledge, and in its moment, astrological, based in a symbolism described in the Emerald Table: "that below is the same as that above, and that above is equal to that below, in order to create the miracles of something,"[96] and that establishes a "mutual action between astral and terrestrial sphere, between man and universe, called macrocosmos-microcosmos correspondence."[97] About the intimate relationship astrology-alchemy, to discover the secret sympathies of heavens and earth, appeared the analogies between metals and celestial spheres (Sun-gold, Moon-silver, Mercury-mercury, Venus-copper, Mars-iron, Jupiter-tin, Saturn-lead), so "many documents that seemed to be related to astronomy were, in reality, alchemic."[98] It is not easy to distinguish to what extent *Lunar syzygies and quadratures…*, and especially the 1775 almanac, refers to astronomy, to alchemy or to both.

95 Probably Orion.

96 *Tabla Esmeraldina* Heidelberg edition, quoted by Titus Burckhardt, *Alquimia. Significado e imagen del mundo*, p. 187.

97 Charles Burnett, "Astroalquimia" in: Claus Priesner y Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética*, p. 91.

98 Crosland, *Estudios históricos en el lenguaje de la química,* p. 26.

Imagination flights

> Restless and rebellious were the new philosophers, errant knights, knowers of a universe between dreams and magic, between utopia and illusion of a universal and perpetual peace, between a critical reflection that ponders the heart of hearts and the mystical wandering through the souls of stars or through the mathematical formulas that shall translate their movements.[99]

The idea of space is intrinsic to the one of time, and the one of time to periodicity and number. From the observation of the occurrence of events, of the movements of the stars, of day and night, a spatialization of time is obtained: the calendar. And the observation of time and the stars results in an interpretation of space: the map. Both, calendar and map, required the observation of celestial phenomena.

Astronomy in Mexico had a noticeable development in the pre-Hispanic era, but it was later subjected to the progress of the western tradition. This period of adoption of western astronomy began with a practical astronomy that gradually relegated the speculative aspects up to the construction of the National Astronomical Observatory in the XIX century.[100] In New Spain there was

99 Garin, quoted by Andrea Aromático, *Alquimia, el secreto entre la ciencia y la filosofía*, Ediciones B, Barcelona, 1997, p. 23.

100 According to Roberto Moreno, this period can be divided in four phases: "1) XVI century to XVII century. Introduction to the astronomical studies. Clear link with astrology. More pragmatic than speculative. It ends with the famous polemic Kino-Sigüenza about the comet of 1681. 2) XVIII century, first half, until 1769 [date of Venus' transit through the solar disc]. Continuity astronomy. Observation of noticeable phenomena. Negation or disdain of the Copernican revolution; traditionalism and outdated instruments 3) XVIII century, second half (1769 - 1803). Renovation of the astronomical science. Introduction, acceptance and practice of Copernican and Newtonian paradigms. Renovation of instruments. It ends with Humboldt's visit. 4) XIX century. From Humboldt's

a wide scientific tradition, there were important metallurgic and chemical studies, as well as about physics, mathematics, astronomy, cartography…,[101] said tradition met its greatest drive in the XVIII century due to, on one hand, the possibility of scrutinizing the celestial phenomena that occurred in this century (comets, eclipses and the passage of Venus through the solar disc), and on the other hand, to the "triumph" of the Mechanical theses and the vision of knowledge they implied. Even though observational astronomy had a special impetus during the XV century in relation to the art of sailing and the reform of the Julian calendar, it was in the XVIII century when polemic arose surrounding the nature of celestial phenomena and its effects in the life of man, which separated astrology and astronomy even further.[102]

The practice of creating lunar records and almanacs was common during Colonial times, yet very few were printed, and "most of these almanacs were inventions".[103] There were various kinds of almanacs, among which were works of "practical nature intended to determine the dates of the always mobile religious calendar";[104] the ones that mixed matters of astrology and exegesis with an astronomical approach predominated, which would prevail with the triumph of modern science that put an end to the debate that surfaced between astronomy and astrology, dividing them definitely. In the almanac written by fray Manuel Antonio de Rivas one can perceive scientific rigor in the prognosis and dominance of

visit to the foundation of the National Astronomical Observatory". Roberto Moreno "Astronomía mexicana del siglo XVIII", en: Marco Arturo Moreno Corral (comp.), *Historia de la astronomía en México,* SEP/ CONACYT/ FCE, Mexico, 1986, p. 124.

101 Elías Trabulse, "El legado de Humboldt a la ciencia mexicana", in: Frank Holl (editor), *Alejandro de Humboldt. Una nueva visión del mundo*, UNAM, Mexico, 2003, pp. 88–89.

102 See: Elías Trabulse, *Ciencia y Tecnología en el Nuevo Mundo*, FCE / COLMEX, Mexico, 1996.

103 Elías Trabulse, *Ciencia y Tecnología en el Nuevo Mundo*, *op. cit.*, p. 83.

104 líasTrabulse, *Historia de la ciencia en México*, FCE, México, 1997, p. 194.

astronomy over astrology, but this willingness of rigor is equally present in the fictitious story where (in the Lunar Athenaeum) the accuracy of the watcher's calculations is discussed, and value judgements are mixed with mathematical ones, it would seem that the discussion of the calculations is just a pretext to criticize the Muslims or a licentious moral; instead, the almanac is adjusted more to its textual type.

> Our historians and chronologists announced, of course, that all the syzygies and quadratures, and new moons written on the face of the nuncupative letter adjust punctually to the roots or sources from where they derive, in such a fashion that, were they in use, there would be nothing to amend or correct. Yet in regard to the Arabic or the current Mohammedan ones, which are unremarkable, many felt that the watcher's work has been unprincipled […] On the contrary, some doubted not to maintain that the news of the Arabic years, and the distribution of their Neomenias, should not be aggravating to the lovers of the sciences; and that in this consideration, the years of the Hegira, and the first Neomenia of the Muharram shall be taken into account.[105]

Some of Rivas' calculations are very accurate: in the almanac a lunar eclipse is registered on August 11 of 1775, which occurred but it was not total nor partial, but rather penumbral[106] (penumbral eclipses cannot be distinguished at first glance because there is no 'bite mark' on the Moon), and in the tale it is calculated that the diameter of the Moon in proportion to the Earth is 33/121=.27. Galileo had

105 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 84.

106 National Aeronautics and Space Administration. http://sunearth.gsfc.nasa.gov/eclipse/lecat/LE1701–1800.html.

calculated an erroneous ratio of .14, in the Unsöld treatise of Astronomy[107] it is recorded that the correct ratio is .272[108], that is, the same one as in the text.

Regarding the observation of eclipses (Sun eclipses mainly), there was controversy about their effects in this century, or in general about celestial effects over man, that is why Carlos Sigüenza y Góngora wrote an ironic text titled *Philosophical manifesto against the comets deprived of the dominion they had over the bashful*, in which he attempts to topple the superstitions surrounding this occurrence with scientific arguments. Beyond the interpretations made about them, eclipses and the Moon along with astronomical calculations were useful for determining longitudes and other terrestrial measurements: in order to know the Earth, one must observe the stars. The control of maritime routes depended on the elaboration of sea charts, which in turn depended on astronomical observation. Regardless of the objectives, astronomical observations would have an effect in cartography (a progressively complete image of the globe) and in the calendar, as well as in the vision of the universe: "thus it turns out undeniable that maritime voyages made by the Spanish and Portuguese not only broke the medieval geographical unit ecumene, but they also set the basis over which, in less than a century later, the Scientific Revolution

107 *The New Cosmos*, Heildenberg, 1969.

108 Earth is 3.66 times bigger than the moon, or -in other words- the Moon holds 0.27 of the terrestrial diameter. 1,737 and 6,357 are the radiuses of the Moon and the Earth respectively (distance from the center to the surface). Aristotle suggested that Earth was three or four times bigger than the Moon, based on the Earth's shadow visible during lunar Eclipses (in fact, it was in such a way that he claimed that Earth was round). Hiparco correctly established that the Moon was 59 radiuses away from the Earth. Others who found similar numbers were Aristarchus and Claudio Ptolomeo. Considering that in the II century Eratosthenes had already determined the Earth's size, (40,000 km of circumference) it was all a matter of multiplication. (Data provided by Pablo Lonnie Pacheco Railey of the Astronomical Society of the Planetarium Alfa, Monterrey Nuevo León).

was established. A New geographical World gave birth to a New scientific World in Europe."[109]

It is customary to call Scientific Revolution the period that elapses between the work of Nicolaus Copernicus (1543) and the one of Isaac Newton (1687),[110] although other authors circumscribe the Scientific Revolution to the XVII century and attribute it to Galileo and Descartes.[111] The revolutionary aspects of this period have been questioned by some historians that stress the diversity in cultural practices in the XVII century that had modern as well as ancient aspects,[112] or by those who claim that heliocentrism finds its origin in Hermeticism:

> Copernicus' affirmation that the Sun, and not the Earth, resides at the center of the solar system was more of a personal option than a discovery. Copernicus studied Hermetic/Platonic philosophy in an Italian university, and on the first page of About the revolution of celestial orbits, a work published in 1543, he quotes the following words by Hermes Trismegistus: "The Sun is the visible God."[113]

Even though the sages of the Library of Alexandria already knew the equinoxes with precision, that the Moon was responsible of the rhythm of the tides[114] and that the Earth revolved around the Sun, there is no room for doubt that the publication of the Copernican theory fostered a change of paradigm in the astro-

109 Elías Trabulse, *Ciencia y tecnología en el Nuevo Mundo,* p. 9.

110 Giovanni Reale y Dario Antiseri, *Historia del pensamiento filosófico y científico*, tome II, Herder, Barcelona, 1999, p. 171.

111 Alexandre Koyré, *Estudios de historia del pensamiento científico*, XXI century, Mexico, 1991, p. 180.

112 Steven Shapin, *La revolución científica, Paidós*, Barcelona, 2000, pp. 17–25.

113 Timothy Freke and Peter Gandy, *Hermética*, Ediciones B, Barcelona, 1999, p. 20.

114 *Ibid*, p. 14

nomical knowledge that would lead to a schism in the philosophical, political and religious-theological spheres. The first version of Copernicus' theory (*commentariolus,* circulating in hand-written copies since a decade before) appeared in 1540, it proposed a new world system that placed the Sun at the center of the Universe and attributed three movements to the Earth: a daily turn on its own axis, a yearly orbit around the Sun and a spin of the Earth's rotation axis in order to explain the precession of the equinoxes.[115] In 1543 *On the Revolutions of the Heavenly Spheres* was published; Nuremberg's edition included a preliminary note that denied that the new theory was true and considered it only a "convenient mathematical method for giving account of the apparent movements of heavenly bodies, predicting their future positions."[116] This affirmation shows the rejection of the implications of a heliocentric system that inverted the cosmic values and, with it, the idea of the hierarchical universe. Tycho Brahe proposed a system mathematically equivalent to the Copernican one that restores the Earth's position at the center of the universe; later Kepler, heir to Brahe's astronomical observations, would develop the cosmic values of the Copernican system to which he made some corrections, such as the elliptical (not circular) orbit of the planets. Almost a century after the appearance of Copernicus's work, Galileo published *Dialogue about the two maximum systems of the world, the Ptolemaic and the Copernican* (1632); his astronomical discoveries by means of the telescope would support the Copernican theory, showing it was true, reason why, as it is known, in 1633 he was forced to abjure.

115 Stephen F. Manson, *Historia de las ciencias*, tome II, Alianza, Mexico, 1997, p. 9.
116 *Ibid.*

If there was resistance to accept the new cosmological canon in Europe, in the new world, even though since the XVII century the diffusion and exposure of the theories of Copernicus, Tycho Brahe, Kepler and Galileo in lectures had been achieved, a debate was elicited going into the second half of the XVIII century about the world system; perhaps it was until then because during the XVII century the ones who knew these theories kept their unorthodox opinions hidden, or they simply did not share them, as it was the case with the Franciscans Cristóbal Grande, Pedro de Oronsoro and Juan Pablo Echegoyen, who even in 1761 declared his belief in the Earth's immobility before the Tribunal of the Inquisition.[117]

Among the Jesuits there were two postures: the ones convinced by the geocentric theses, like Cristóbal Flores and Juan de Brea, and those who began incorporating the studies of modern scientific authors in their syllabi, thus inclined towards heliocentrism, like Francisco Javier Alegre, Francisco Javier Clavijero and Diego José de Abad. One who openly discussed about the world systems in his *Elementa recentioris philosophiae* (1774) is Juan Benito Díaz de Gamarra, a creole erudite, connoisseur of the works of Kircher, Gassendi, Boyle, Bacon and Newton, who adheres to Copernicus' heliocentric system, though he considered it "a mere hypothesis to explain the movements and phenomena of celestial bodies."[118] *Alzate's literature gazettes* left notable testimonies of this discussion, that would continue up to the year 1812, year in which the book of the Spaniard Reygadas with a Copernican posture *Astronomical idea, the censured Copernican model* was published, which conti-

117 Elías Trabulse, *Historia de la ciencia en México*, p. 203.

118 Juan Benito Díaz de Gamarra, "Valoración de los sistemas del mundo", in: Elías Trabulse, *Historia de la ciencia en México*, FCE/CONACYT, Mexico, 1997, p. 465.

nued said polemic between a defender of the author called Zubero and Lucas Alamán, who claimed the validity of heliocentrism.[119]

The late impact of the Scientific Revolution in Colonial times[120] in relation to Europe has been attributed to a certain extent to the relative stall or cultural decadence in XVII century Spain, where the arrival of modern science is due to the labor of a small group known as the Novators (around 1687) who gathered in tertulias and scientific academies, and showed rejection to scholastic, correlated to an interest in the new science.[121] The spread of the new "scientific" knowledge in the New World can be perceived not only in lectureship, but especially in the circulation of forbidden works and the emergence of sociability forms (tertulias and academies) alternative to universities. While in New Spain the argument about the system of the world had been centered around Copernicus, Ptolemy and Tycho Brahe, one more unknown author saw to demonstrate the falsehood of another system: the one of Descartes' vortices, which assumed that matter impregnated all space and could only undergo a rotating movement, and as a result a giant vortex was created that dragged blocks of matter in its surrounding.

> The more the universe developed, secondary vortices began around every matter cluster. There was a vortex surrounding the Earth that dragged the Moon in its course, and another one around Jupiter that kept its four moons in their orbits, while the Earth and all the planets are trapped in a wider vortex surrounding the Sun.[122]

119 Elías Trabulse, *Historia de la ciencia en México*, p. 210.

120 It is important to highlight that the Catholic church did not accept the Earth's mobility nor heliocentrism until the XX century.

121 Antonio Mestre Sanchis, *La Ilustración española*, Arco–Libros, Madrid, 1998, pp. 9–18.

122 Stephen F. Mason, *Historia de las ciencias*, p. 63.

Even though this system assumed that the Earth could be resting at the center of the world, it was included in the *Index of forbidden books* in 1663, yet it was removed from it in 1740 as "an alternative to the Newtonian system of the world that was becoming popular in France at the time."[123] Perhaps that is the reason the Franciscan Manuel Antonio de Rivas sought to disprove it:

> I had surely traversed 25 thousand leagues, when I simply had to laugh, remembering the terrestrial vortex of Monsieur Descartes; who, taken away by an extravagant imagination, makes the Moon circle the Earth in the strength of its vortex; of which I found no vestige whatsoever.[124]

In the same way, fray Diego Marín de Moya ratifies the criticism towards Descartes in his apologetic letter with the date 1777 in defense of fray Manuel Antonio de Rivas:

> And that in the supposition that as the context well manifests, he wrote how an apologue could serve from the hypothesis of the Earth's movement; of the placement of hell in the Solar globe, as if mocking the Englishman's modern invention, the same way he has made fun of some of the greatest philosophers of the Cartesian system with several apologues and certainly with the one about the voyage to the world of Descartes.[125]

In 1690 the Jesuit Gabriel Daniel's *Voyage of the world of Descartes* was edited in Paris; the translation to Spanish was edited in 1693. A

123 *Ibid.*
124 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 86.
125 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 124.

satire and at the same time "a reasoned criticism of the cartesian philosophy",[126] it is a trip of the souls separated from the body, among which are mainly Descartes' disciples and a skeptic that claims: "The world of Descartes is no other than the same world, explained in its beginnings."[127] This reference to the *Voyage of the world of Descartes* shows that it undoubtedly circulated in New Spain; there are significant similarities to the tale of fray Manuel Antonio de Rivas who surely knew this text in which a trip to the moon is also made and the main character wishes, the same way as the French traveler Dutalon, to prove the inexistence of the tourbillions. On the other hand, in the defense Diego Marín de Moya shows an ample knowledge of the Copernican theses, given that he argues on their basis regarding one of the propositions of the booklet submitted to assessment and that was considered heretic: about the location of Hell, of which he asserts no one knows the place.

> Yet, it has to be said that in the Copernican hypothesis, in which the Sun lies at the center of the world, and the Earth moves around it as a planet, the Sun would be in the highest point in the whole universe, as in the highest part of the Empyrean; and then by consequence of doctrine, one who adopts such a system has to say, that he who from the Earth goes to the Empyrean , ascends, goes up, or goes into the highest place; yet one who goes to the very Sun from the Earth, goes into the deep, descends, or goes down; and this is one of the considerations that led the Anglican Svviden to place Hell in the beautiful body of the Sun.[128]

126 Luis Villoro, prólogo a *Viage de el Mundo de Def–Cartes* del jesuita Gabriel Daniel, Universidad de Guanajuato, 1996, p. xv.

127 Gabriel Daniel, *Viage de el Mundo de Def–Cartes*, Universidad de Guanajuato, 1996, p. 34.

128 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 122v.

In the Christian tradition, the location of Hell has historically elicited debate. Some placed its entrance near volcanoes in islands like Sicily or in Ireland,[129] others, like Juan Escoto, considered that "the location of Hell under the Earth cannot be other than symbolic,"[130] which opened the way to a more spiritual idea of Hell; in the XII century theologians and the scholastic divided the popular elements and built a more "official" image of Hell. In the Hermetic tradition, Hell designates the futile and eternal work of the "false alchemists, who continuously remain in the burning furnace without ever seeing God."[131] Nevertheless, the idea of placing Hell in the Sun, in Diego Marín de Moya's view, is nothing but amusement resulting from the logical consequences of heliocentrism, yet other reads must not be discarded, for example, in the *Mundus subterraneus* (1665) by Athanasius Kircher, the *Pyrophilaciorum* (*Pyrophylax,*[132] fiery cavern, or "great internal fire; guarded fire", the expression Rivas uses to refer to the Sun) is the system or network of subterranean fires,[133] the volcanoes that are connected to the Earth's center, that is why Hell can be in the Sun (or light) where God almighty set his throne.[134]

The distance between the expedition trip and the imaginary voyage is comparable, and if the settlers organized extensive expeditions to obtain an image of their domains or to find the imaginary Strait of Anián,[135] this Franciscan explored his own territory

129 Georges Minois, *Historia de los infiernos,* Paidós, Barcelona, 1999, pp. 235–239.

130 *Ibid*, p. 236.

131 Dom Antoine–Joseph Pernety, *Diccionario mito–hemético*, Índigo, Barcelona, 1993, p. 241.

132 "Pirofilacio" is an "extensive cavern full of fire, which in other times it was supposed to exist in the Earth's interior." (Cásares)

133 Athanaisus Kircher, *Itinerario del éxtasis o imágenes de un saber universal*, tome II, Ediciones Siruela, Madrid, 1985, p. 224–225.

134 Barent Coenders Van Felpen, *La escalera de los sabios*, Índigo, Barcelona, 2001, p. 291.

135 Which communicated the Atlantic North with the Pacific and that propelled the Spanish crown to launch and finance expeditions from the XVI century to the XVIII century. Cfr. Elías Trabulse, *Ciencia*

in order to observe it with the eyes of the French traveler and make deductions enunciated from fiction.

The value of experimentation

> Foreseeing that, when seen traversing the air, the stake would be lit for me to be burned publicly at the plaza like a sorcerer, I thought it convenient to carry out some tests…[136]

The French traveler, Dutalon, protagonist of the tale *Lunar syzygies and quadratures…,* performed several experiments in his attempts to reach the Moon, which refer to real scientific operations and represent the spirit of an experimental science that coexists with Hermetic traditions. Before trying to clarify the connection of certain references to other discursive areas it must be kept in mind that behind the figurative language are hidden scientific intentions, and what could seem a scene of fiction could in reality convey scientific concepts or operations.

In the formation of modern science, the noticeable presence of magic and Hermetic tradition[137] has been highlighted; "the relationships between the properly called sciences, like astronomy and chemistry, and pseudoscience, like astrology and alchemy, were very problematic."[138] One significant change was the transition from a knowledge for the initiated, secret (Hermetic) and in an obscure language, to public knowledge in a clear and understanda-

y Tecnología en el Nuevo Mundo, op. cit., pp. 16 and 38.

136 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 86.

137 Giovanni Reale y Dario Antiseri, *Historia del pensamiento filosófico y científico*, tome II, Herder, Barcelona, 1999, p. 174.

138 Steven Shapin, *La revolución científica*, p. 23.

ble language, observable and verifiable; such a transition implied the union of science and technique: the experimentation understood in a double direction, "as theories that introduce facts, and by facts that control the theories,"[139] or as the capacity of artificially creating situations at will in order to observe and confirm, but also understood as the ability of reasoning about non-performed experiments: the imaginary or thought experiment that has been the basis of many of the natural philosophical systems (Galileo, Descartes, Newton, Einstein), given that it eliminates the uncertainty and imprecision of real experiments.[140] In this sense, most of the experiments that are next mentioned sometimes imply the character of thought experiment, yet from a different approach many of them could be considered real.

Before ascending towards the spheres, the French traveler takes refuge in the Calamine (Canary) Islands[141] "in the Libya [Lidia] floating or swimming on the water's surface", in alchemical code "calamine" (even in current chemistry) is the denomination for zinc, carbonate and silicate minerals. The voyager's first concern was to verify whether or not there was communication from the northern part of the European continent with the American one, and he observed that they were divided by the Euripus of the Glacial Sea. Dutalon performs the second experiment on the two highest mounts on Earth (known until then): the Tenerife[142] in the

139 *Ibid,* p. 255.

140 Alexandre Koyré, *Estudios de historia del pensamiento científico,* Siglo XXI, Mexico, 1991, pp. 207–208.

141 "Certain islands are always floating […]; in Libya the so-called Calamines, which can be pushed through the air, even by the hooks of a boat, where one desires to. They were salvation to multiple citizens during the Mithridatic war", Pliny the Elder, *Historia natural*, Gredos, Madrid, 1995, pp. 454–455.

142 "Tenerife island's peak, one of the Canaries, which can be seen from 70 leagues of distance: it is inferred to be 8 Italian miles tall, which are two and almost a half one Spanish miles…". Vicente Tosca, *Compendio Matemático en que se contienen todas las materias más principales de las ciencias que tratan de la cantidad*, t. VIII, Madrid, 1727, Imprenta de Antonio Marín. (BEA), p. 220.

canaries and the Pichincha in Peru. In the tradition of cartography, which was enriched by the data provided by English, Dutch, French, Russian and Spanish travelers,[143] the meridian from which the longitudes were traced was the one of Tenerife.[144] On those "mounts" or at such heights, he tried to test whether the "Aqua regia or strong-water" dissolved gold, which did not occur, and this is clearly an alchemical operation. (According to the abbot Pernety, the name strong-water is given to mercury, very sour vinegar, which dissolves all bodies, its chemical counterpart would be nitric acid, for strong-water, and the mixture of nitric and chlorohydric acid, for aqua regia).[145] What is striking about the passage is that he denies that this operation is (or was) possible. In said verification he speaks about an alteration of the sense of taste that does not register spicy flavors, then he mentions he performed operations about the elasticity or bounce of air, which he does not specify; yet Boyle had already designed a pneumatic machine to perform experiments in a vacuum in the previous century, and in 1660 he published *New physical-mechanical experiments related to the bounce of air*, given the similarity to the title it is very likely it alludes to this kind of tests. In the XVIII century the argument about the air's weight and the barometer would continue between scholastic and modern ones.[146] It was known at the time that when going up the

143 Elías Trabulse, *Ciencia y Tecnología en el Nuevo Mundo,* p. 60.

144 Santiago Douret even made some adjustments in a Map of captain Cook's, published in 1785, engraved in 1788, and he changed the meridian of reference from Greenwich to Tenerife. *Ibid*, p. 61.

145 Claus Priesner and Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética,* Herder, Barcelona, 2001, p. 23.

146 See on the matter: *Cartas al Ilmo y Rmo P, Mro F. Benito Geronymo Feijoo Montenegro que le escribia sobre El Theatro Crítico Universal Francisco Ignacio Cigala, americano quien las dedica a las Universidades de España y América*, Imprenta de la Biblioteca Mexicana, Año de 1760 (BEA).

mounts of Peru "Some have died suddenly at those heights because the air lacks the qualities that make it breathable".[147]

Another experiment consisted in throwing a sheet of tissue paper into the "very pure, subtle and homogeneous ether" (common space or substance in which the four elements are contained) in order to observe the direction it turned to; through this he observed "that the paper followed the orient, in the rotation that the atmosphere followed along with the Earth": The confirmation that the Earth spins on its own axis?

In the course of his ascension, the traveler narrates that he felt an incomparable cold, which led him to reflect upon the cold in elevated places over the sea level, and in that reflection, he does not establish a connection with the fact that heat and cold are the inducting forces in the transmutation process,[148] but he does so with the fact that the Tenerife's peak is covered in snow almost the whole year long. A fact he refutes while ascending is the mistake of Descartes vortex. He then dropped a container full of water from the mythological Lethe River (once more the resource of mythology) thar then stood still, of which he makes no interpretation at all, but that could be the state or reaction of matter when combined with certain substances, or from a Mechanical perspective, a consequence of the absence of gravity. Many scientists made experiments in that century and the previous one about the free fall of bodies, trying to get around the problem of measuring fall velocity due to gravitational force, although it seems the problem was not envisioned in space.[149] After gathering the Sun's rays in a caustic mirror, he observed that "they did not liquify many objects set

147 Vicente Tosca, *Compendio Matemático en que se contienen todas las materias más principales de las ciencias que tratan de la cantidad*, Tomo VIII, Madrid, 1727, Imprenta de Antonio Marin (BEA), p. 218.

148 Titus Burckhardt, *Alquimia. Significado e imagen del mundo*, Paidós, Barcelona, 1884, p. 88.

149 Stephen F. Mason, *Historia de las ciencias*, p. 39.

at convenient distance" (regarding liquefaction, Pernety mentions matter that is able to be dissolved or liquified with fire)[150] and he deduced that it was due to the lack of "heterogenous" air, also that a catoptric tool (used for the reflection of light) was useless in the homogenous ether.

Behind a coded language the stages of an operation can be hidden, like the indications in the almanac or like when the Moon dwellers or anctítonas describe the lunar landscape through analogies and algebraic formulas that would rather seem like the description of a process. Resuming other geographical references, the mythical and real scenarios appear to be in equal level: the description of the lunar orb mixes theology and demonyms, mathematical calculations (quadratic equations) along with denominations such as "*pons asinorum* or the bridge of asses", which is how it is commonly known according to Jules Verne,[151] the square of the hypotenuse, and of which the number of arcs must be calculated. In Hermetic science, the properties of life (cold, hot, dry and wet) are determined parting from the astronomical universe and from the solar trajectory these phrases are marked: "The solar trajectory, as it appears in the horizon, describes, from the winter solstice to the summer solstice, progressively wider arcs, that become narrower as the year advances into completion."[152] March the 2nd (not 21st) and September 22nd of 1775 are marked in the almanac along with a quote in Latin attributed to Ovid and Virgil respectively (considered authorities in alchemy), as dates in which the movement of the Sun makes days the same as nights, that is, equinoxes. The duration and time required for chemical processes

150 Dom Antoine–Joseph Pernety, *Diccionario mito–hermético*, Índigo, Barcelona, 1993, p. 281–282.
151 Julio Verne, *De la Tierra a la Luna,* Plaza & Janés, Barcelona, 1998, p. 22.
152 Titus Burckhartdt, *Alquimia. Significado e imagen del mundo*, p. 41.

were also hidden through allegories,[153] it is not easy to specify if the 1775 almanac displays a calendar that is not the religious one.

The mention of Pythagoras and Euclid, or of the management of the trigonometrical canon are very visible clues that announce the will to show a solid mathematical education (not a mere fondness, as a witness had pointed out), which, along with everything previously stated, demonstrates the reach of experimental science's diffusion in the colonies: "the practices that can be considered, in general terms, experimental and inductive managed to permeate various European countries and even the American colonies' emergent scientific culture."[154] The French traveler confirms it: "Yet seeing that the school's philosophy was useless, and that it could produce no big nor small doctor, I went to Paris, where the study of experimental physics, which is the true one, would be bestowed upon me with untiring effort,"[155] and quoting an epigram from Marcial, he spoke about the sources which experimental news should be based on: *Multum crede mihi, efert, a fonte bibatur qui fluit an pigro qui stupet unda lacu,*[156] which could be interpreted as a metaphor for the fact that knowledge should flow, better, from water as primordial matter. The source is the matter where mercury is extracted from, the container that holds the matter of the Great Work, or for some, the fountain of the elixir or balm of life.[157]

Seen such experiments altogether they would seem to describe the steps for a process, a recipe, that the reader must interpret in order to access a knowledge that is true yet that silently and

153 Crosland, *Estudios históricos en el lenguaje de la alquimia,* p. 40–41.

154 Shapin, *La revolución científica*, p. 141.

155 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 85.

156 "Believe me so, it is rather convenient to drink from a fount that flows instead of delaying and remaining motionless as lake waves" or, "Believe me, it matters much to drink from a flowing fountain, instead of a dead lake of frozen waves"

157 Dom Antoine–Joseph Pernety, *Diccionario mito–hermético*, pp. 199–200.

gradually becomes less secret. Formerly, the relationships between science and magic were not clearly differentiated, and it is something that modernity established, and forgot.

Back to the myth

When Kepler and Galileo set sight on the skies, the system of values transformed, and the old myths were reinterpreted. The transgression of knowing the secrets of the places high above (God's secrets) fostered the circulation of images regarding this prohibition during the XVI and XVII centuries, especially in emblematic literature: "Icarus, falling from the skies, as well as Prometheus, punished for having stolen the divine fire, were seen as symbols of the astrologers, the astronomers, the heretic theologists, of the philosophers inclined to have audacious ideas, of some not well characterized political theorists."[158] Since the cosmic values changed, the moral values were inverted, and what before was considered a vice began to be regarded as a virtue: audacity. The images that showed the fall of Icarus now displayed him flying placidly, Icarus and Prometheus represented intellectual impulse. This recovery of the Greek myths took place in other scenarios, albeit with different meaning.

In New Spain in 1652, fray Diego Rodríguez (a scientist in the transition between Aristothelian-Ptolemeic doctrines and modern ideas) in *Discourse on comets*, within the section titled "The place of comets is in the sky from the Moon upwards", he states: "The cart torn apart and the sky with lightning and sparks scattered, Phaethon fell into the Eridanus River, in a fiery death without being left scalded."[159] In *Lunar syzygies and quadratures…* by fray Manuel

158 Carlo Ginzburg, *Mitos, emblemas, indicios. Morfología e historia*, Gedisa, Barcelona, 1999, p. 101.
159 Elías Trabulse, *Historia de la ciencia en México*, p. 325.

Antonio de Rivas, the myth reappears, maybe taken from the same source where fray Diego Rodriguez refers from: "*Metamorphoses*" by Ovid, a work that appears quoted in the booklet, "Ovid book 2 Metamorphoses". Here the myth narrates a catastrophe sustained in the lunar orb, a fire caused by Phaethon:

> Seeing now the disgraceful end that our ancient monuments had; as you well know, Mister Bachelor, that an inconsiderate one entrusted the governance of the Horses of the Sun to a young, arrogant son, volatile, with only the vane warning of: *medio tutissimus ibis*; who wandering through the very vast provinces of the Ether, he set all the planets in flames, as well as our orb, reducing everything he found on its surface to dust; while only some Anctítonas saved themselves in the depths of the caverns. Since our memories were engraved in silver sheets, that is the paper of which today we still make use; they could not resist the activity of a ravenous fire. At the end the vanished Phaethon paid his insane foolhardiness, falling head first into the Po River, otherwise known as the Eridanus.[160]

In fray Diego Rodríguez's text, the references about Seneca, Ovid, Lucian (who in *True History* narrates a trip to the Moon) are very noticeable, which could lead to two hypotheses: analogy was an explicative resource with some scientists as a remnant of the scholastic method (analogical Hermeneutics), yet on the other hand, the shelter found in mythology was an important strategy of the alchemic language. These two hypotheses, in turn, necessarily lead to Rivas' case: fray Diego Rodríguez as well as the accused are in the border of two traditions. Nevertheless, the resource of myth in

160 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 85.

fray Diego Rodriguez's work was merely explicative, rather than an attempt of giving mythical origins to a sidereal phenomenon. In fray Manuel Antonio de Rivas' case the textual type is less defined, while in fray Diego Rodríguez's case the scientific intention is clear, with Rivas this passage could be considered a resource of fiction with no further intentions, or it could be addressed to another level of reading, maybe a Hermetic one, a more plausible hypothesis, since in the "framework of recovery and revaluation of ancient mythology during the Humanism, ancient myths also found their place in alchemic literature";[161] thus, Ovid (along with Homer and Virgil) were considered authorities by alchemists, the *Metamorphoses* "were helpful in the construction of a parallelism with the transmutation of metals".[162] Therefore, rather than a symbolic interpretation, myth appears to be a resource for explaining an activity that involves fire, be it a comet, be it an alchemical operation: "The resource of living beings (plants, animals, men) or of ancient mythology allowed one to elaborate on a thorough description of long processes, resorting to the metaphoric form."[163] According to Dom Antoine-Joseph Pernety's mythical-Hermetic dictionary "Phaethon's cart" is one of the Great Work's names,

> Phaethon is the symbol of bad artists who, having everything necessary to work on the stone, ignore the philosophical fire, or do not how to handle it and burn the matter, represented by the

161 Heike Hild, "Mitoalquimia", in: Claus Priesner y Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética,* p. 337.

162 *Ibid,* p. 338.

163 Lawrence Principe, "Sobrenombres", in: Claus Priesner y Karin Figala (eds.), *Alquimia. Enciclopedia de una ciencia hermética,* p. 445.

> Earth that this son of the Sun set on fire for not knowing how to drive his father's cart.[164]

In Rivas' reinterpretation, Phaethon sets the Silver Moon on fire, as well as all the planets (recall their correspondence to the metals), and it is mentioned that, without moderation nor prudence one can fall into the precipice, along with this phrase in Latin: *Regia solis erat* (Metamorphosis, book 2, by Ovid), which can be translated to "the royal palace of the sun was", "the palace was isolated" or "the rulers were alone", the king represents sulfur or philosophical gold and to the matter that is set first in the manufacture of mercury.[165] It is read starting from the astronomical symbolism that the Sun-King myth, who dies and is buried to be reborn.

Other myths, although from the Christian tradition, that appear in the tale are the ones of Babel and the Genesis. The themes of Paradise and Adam are the pretext to refute the idea of the original sin:

> I wager that if anyone who deems absurd the opinion of placing Paradise on the Moon, from where the good Adam was banished for indulging a woman (*I wish this easy condescendence had not been brought down later*), had traversed all these regions, he would have certainly moderated his sentiments.[166]

The idea of placing Paradise on the Moon had already come to Cyrano de Bergerac's mind, and at this point it seems less difficult to distinguish between influence and coincidence; what is certain is that questioning the heritage of the original sin is an enlightened

164 Dom Antoine–Joseph Pernety, *Diccionario mito–hermético,* p. 99.
165 *Ibid,* p. 452.
166 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 90.

act: why is the entire humanity condemned for the sin of a single man? From other traditions, Adam is considered the hermaphrodite, a philosophical Adam because "inside him God accumulated the purest substance of all beings."[167] The alchemist Nicholas Flamel assumed that the removal of sins was the return to Adamic perfection, since alchemy as the knowledge of immortality is a sort of mystique whose end is the union to that principle that is God.[168] In *The hermaphrodite child from the Sun and the Moon,* an anonymous alchemical work published in 1752 in Germany, the Moon is compared to Paradise:

> Now in the upper position, the Moon is presented to us, the figure of Diana, white as snow, the steady queen, nevertheless grained in the inside, with the cervices of its impregnation, with all the colors of the peacock and petrified in the finest white, holding inside it the purest kingdom of Paradise.[169]

However, it was the idea of placing Hell in the Sun, from the supposed Anglican Swinden, where the henchmen are leading the soul of a "materialist" from Yucatán, which precisely the assessors considered heretical, and there are other even more censurable topics, such as the veiled attacks to scholastic and the inquisition itself, that escaped the qualification which, even though it claims to be refuting an almanac, it is focused on judging the tale and not the almanac on its own, with its lunar cycles and its correspondence with the zodiac signs that, according to *The manual of the Inquisitors* of Eymeric and Peña, are external signs for which a her-

167 Pernety, *Diccionario mito–hermético,* p. 27.
168 Titus Burckhardt, *Alquimia. Significado e imagen del mundo*, p 25.
169 Anonymous, *El niño hermafrodita del Sol y de la Luna*, Índigo, Barcelona, 1995, p. 94.

etic is recognized.[170] In an inquisitorial edict from 1647, forecasts and almanacs were censured for being considered subversive,[171] nevertheless there were some kinds of almanac that were allowed and what was essentially forbidden was judiciary astrology. In the *Catalogue of marginalized Novohispanic texts. Inquisition: XVIII and XIX C.*[172] around 30 assessments, censures and what appear to be forecasts and lunar calendars are recorded, most of them done by the Dominican Fray Francisco Larrea, assessor of the booklet *Lunar syzygies and quadratures…* and by Diego Marin Moya, who wrote *Dissertation about the apologues in regard to the assessment of the work by Manuel Antonio de Rivas* (1777), and who served as defense in Rivas' case, where the censure system was divided.

Among the censurable passages that escaped the assessment one with veiled blasphemous content and difficult reading stands out, in it the nicknames and targets of the criticism are confused with one another:

> That he is a restless spirit, turbulent, an enemy of rational society and the spirituality of the soul: that in his own opinion the mother that bore him was of no less condition than the fox, the porcupine, the beetle and any other vile insect of the earth, whose soul dies along with the body.[173]

Countless names have been given to the philosopher's stone: "before they have opened and spiritualized matter, they call it a vile

170 Nicolau Eimeric y Francisco Peña, *El Manual de los Inquisidores*, Atajos, Muchnik, Barcelona, 1996, p. 162.

171 Elías Trabulse, *La ciencia perdida*, FCE, México, 1985, p. 17.

172 María Águeda Mendez *et al.*, *Catálogo de Textos Marginados Novohispanos. Inquisición: S. XVIII y XIX*, COLMEX/AGN/INBA/UNAM,México, 1993.

173 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 87.

thing. When they have sublimated it, they give it the name of snake and the one of venomous beasts."[174] Maurice P. Crosland mentions the employment of this resource in the analogy between the substance's properties and animal behavior, thus, a toad or a raven symbolizes putrefaction; a snake, arsenic; a wolf, antimony; to mention some of them.[175] These sources do not record the animals that appear in the quote, but in *Oedipi Aegyptiacus* Athanasius Kircher[176] the process of the *magnum opus* is described, where the beetle is the beginning of the cycle of transmutation.

The idea that the soul dies with the body is implied in many initiation rites where the transformation is achieved through the experience of death and resurrection, hence it was thought that matter had to be ravaged to death and then resurface, although such a symbolism results ambiguous in alchemy, since it sometimes refers to matter and others to man.[177] Yet the most plausible interpretation of this passage is perhaps that mechanical ideas had as consequence, when addressing the "problem of deciding how much had to be attributed to nature, and how much to God",[178] that matter and soul had the same status, then "could not it be said that the soul dies along with the body?"[179] As Rivas suggests in his apologetic letter:

174 Pernety, *Diccionario mito–hermético,* pp. 4–5.

175 Maurice P. Crosland, *Estudios históricos en el lenguaje de la química*, p. 37.

176 In his work *Mundus subterraneus* Kircher established the distinction between metallurgic, spagyric and transmutational alchemy, for the last one he kept a critical posture. See on the matter: Presnier, *Alquimia. Enciclopedia de una ciencia hermética*. In other sources a porcupine appears, which in emblem studies, it symbolized Philip II (A monarch who was very interested in cartography), a reading that would imply connecting the tale with other traditions. Fernando R. de la Flor, *Emblemas. Lecturas de la imagen simbólica,* Alianza, Mexico, p. 281.

177 Mircea Eliade, *Herreros y alquimistas,* pp. 133–137.

178 Steven Shapin, *La revolución científica,* p. 191.

179 *Ibid*, p. 191.

> It sufficed for the accuser to say I published that there is nothing in the universe but pure matter, that in this system of Anaximander or of Benito de Espinosa, the sacraments or dogmas of evident credibility the church proposes to us for the common belief fell apart.[180]

Among all the suggested symbols, the central and more enigmatic figures employed by Rivas are those of the Sun and the Moon. If one comes back to the starting point, the title of the work: *Lunar syzygies and quadratures…* it implies, on one hand, a mathematical operation ("the ancient Mesopotamians, in order to know the surface area of a circle, used to place it between two squares")[181] and it is essentially a geometry and trigonometry problem, as Antonio de León y Gama argues in 1785,[182] related, in this case, to observational astronomy (conjunctions, eclipses); on the other hand, it implies a geometric proportion for obtaining the philosopher's stone: "The conjunction of Sun and Moon creates our stone. The Sun extracts the substance from the Moon giving it its own color and its nature, which is done by the fire of the stone,"[183] a description attributed to the Catalan philosopher Ramon Lull. The quadrature of the circle also appears in the *Rosarium Philosoporum* edited in Frankfurt in 1550, and it is represented in the alchemic emblematics of Michael Maier in 1618: "let the Male and Female make a circle, of which a square of the same size emerges. Make of this one a triangle, that in turn forms a sphere touching with its

180 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 144.

181 Juan Eduardo Sirlot, *Diccionario de símbolos,* Ediciones Siruela, Madrid, 1998, p. 160.

182 Antonio de León y Gama, "De la cuadratura del círculo", in: Elías Trabulse, *Historia de la ciencia en México,* pp. 453–464.

183 Ramón Llull, quoted by Pernety, p. 10.

curve all the vertexes: then will the stone be born…"[184] There was a special relationship between the elements and the firmament, and said relationship was expressed by means of geometric shapes, where, according to Cirlot, the sky is the circle and the earth is the square, that represent the union of opposites "as an identification and cancellation of the components in superior synthesis."[185] The symbolism of the circle's quadrature is wide, but if one considers the fact that Rivas wrote also an almanac, as well as his fondness of mathematics, the quadrature can refer to more matters of astronomy and measurement of latitudes: "Three things are inquired in eclipses: the *time*, the *magnitude* and the *place* in the sky in which they happen. Known these things, one arrives to the knowledge of the Earth's position in which they are observed."[186]

After all these exegetic attempts, a landscape of the XVIII century becomes visible, one in which there was a multiplicity of traditions and forms of knowledge that proves difficult to be dissociated into disciplines, as we divide them today. In order to give a place to every phrase in the tale *Lunar syzygies and quadratures…* it is necessary to face other arguments and consider the relative weight of these interpretations. What is actually confirmed is that it lies in the diffused line between tradition and modernity, where the change from a belief to another one can virtually be perceived, without denying it, but rather unfolding it in dissimilar possibilities: "I assure you that any Earthling can make the same voyage in their sleep, with the same delight."[187] Fray Manuel Antonio de

184 Santiago Sebastián, *Alquimia y emblemática. La fuga de Atalanta de Michael Maier,* Ediciones Tuero, Madrid, 1989, p. 143.

185 Juan Eduardo Cirlot, *Diccionario de símbolos,* Siruela, Madrid, 1997, p. 160.

186 Juan Antonio de Mendoza y González, *Spherographía de la obscuración de la Tierra en el eclypse de Sol de 22 de marzo de 1727…*, quoted by Elías Trabulse, *Ciencia y tecnología en el Nuevo Mundo,* p. 90.

187 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 87.

Rivas was in the line of transition between the Baroque and Enlightenment, alchemy and experimental science, dream and reason.

A mischief of the understanding

> Who else, if not a fatuous one, would publish mistakes so absurd that they entirely destroy the county's religion not so much for the benefit of the Holy Inquisition, too; what an incoherent and misguided thing it is to say that I deceive the world with a separate virtue, spending life perpetually far from the Altar and from the feet of the Confessor?
>
> MANUEL ANTONIO DE RIVAS,
> Apologetic letter, 1773[188]

If when writing literary history, it is necessary to distinguish between what is written (published) and the history of literature in terms of aesthetic criteria or canons, the subterranean trajectories force a rethinking in both directions: the unedited, the censured, (or the step from oral tradition to a written one) as a part of that history, imply the retrieval of the non-printed document and the revision of a historiography that must be reformulated in the presence of hybrid texts. The notion of literature holds fast to the tension between canon and innovation, between a text and its reception, and the ways of appropriation by the readers are as diverse as the strategies for making a work circulate, and saying what is not allowed, that on occasion surpasses materiality to infiltrate the textual configuration. In this way, literary genres can be expanded or

188 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 144.

even disappear among complex and heterogeneous structures, as with *Lunar syzygies and quadratures…* which is a mixture of satire and philosophical tale written in the form of a letter (epistolary genre), reason why the traditions in which it is inscribed are many.

Within canonical literary history, that oversees the selection of the works worthy of forming the "universal literature", there are many voids and oversights, but more than anything an emphasized ethnocentrism, since Europe was the parameter of the universal for a long time; even the division in periods and literary movements is arbitrary (it can take the name of a monarch or of a generation), thus reducing and betraying the intrinsic diversity of the literary endeavor. Such lapsus are nor insignificant, nor fortuitous, many absences are intentional, and it is possible to follow the route of the silenced, that goes from deliberate oversight to prohibition. In regard to Mexico's literary history, which has been continuously written and restored to retrieve memory and to repair the mistakes of a biased and partial criticism[189] that eliminated all autochthonous elements and assessed each writing from the parameter of the literary history of Spain or Europe (hence they deny the existence of a literature of their own, for considering the novo-Hispanic bad, and a mere imitation), an unfinished space belongs to prosecuted literature, which is paradoxically preserved in the archives of the repressor. The Inquisition censured works that, for its subversive content or because of the predominance of certain genres that highlighted the literary canon, have not been assessed as proper literature.

When speaking about incorporating a text into literary history, the obvious issue (and not so much) is to give it the statute of "li-

189 José Pascual Buxó, "La historiografía literaria novohispana", in: José Pascual Buxó and Arnulfo Herrera (eds.), *La literatura novohispana*, UNAM, México, 1994, p. 29.

terary",[190] which always results overly dubious in a satire that if separated from the immediate context where it makes sense, it could lose it; although we must not forget that in other ages and different settings it can acquire new meanings, as is the case in Jonathan Swift's *Gulliver's Travels*. That is why before regarding *Lunar syzygies and quadratures…* as a literary work, it is necessary to explore the censure and auto-censure relationship and how the figure of an author is built, who arrived from Galicia, Spain (a concentration of enlightened ideas), to the Province of San Joseph of Yucatán in New Spain in March of 1702, and who faced a licentious community of Franciscans that would condemn such ideas. A first hypothesis to resolve the literary status of the trip to the Moon written by Manuel Antonio de Rivas would be that the (induced) auto-censure could result in an impulse to creativity, and a text that was not thought of as literary may very well be one, and seen as literature depends fundamentally on reception in many historical contexts, the readers and users of texts[191] can in a time consider it truthful, and in another, spurious or fictitious. Because in *Lunar syzygies and quadratures…* a complex communication strategy is in effect (since the author employs schemes to criticize, escaping censorship and establishing a hidden dialogue), when facing a text of such a nature the reader can decide between attributing a literary value to what was practical, or vice versa.[192] In the trial against Rivas, each reader "finds out" according to their circumstance and category, in such a way that

190 The discussion surrounding a scientific verification of what is literary was introduced by the Russian formalists, who starting at stylistic and structural qualities attempted to demonstrate the literary nature of the texts, which they called "Literariness." This immanence-related approach was heavily criticized because it discarded every resource to history and bypassed the function that every text exerted in its time throughout time.

191 All literary history is necessarily linked to reception studies, to the ones of mentality and to what has been denominated "new cultural history".

192 Eva Kushner, "Articulación histórica de la literatura", in: Marc Angenot, *et al.*, *Teoría literaria*, XXI century, Mexico, 1993, p. 141.

some are part of the complicity: inquisitor Bergosa, inquisitor Mier and the defense by fray Diego Marín Moya, point out the fictional or literary nature or the text, and it is very likely they recognize its second intention of transmitting scientific knowledge. During the Enlightenment, texts where a pretext for the diffusion of philosophical and scientific discussion, so it is difficult to imagine "a history of literature from the XVI or XVIII that excludes the essay, the letter, the dialogue, the comment, the encyclopedia…",[193] genres that coexisted many times. The resource of fiction in Rivas would additionally seem a gimmick to mask that knowledge, a way of constructing them, even though said function could distinguish the text from other discursive practices, the satirical tone and the utopic background make it worthy of entering Literary History, where it must take its place next to the tales of travelers or interstellar voyages.

But, to what extent can we talk about "work" and "author" in an anonymous manuscript? In the modern age, the concept of author assumes the printed circulation of works and the ways of legitimizing the texts' property based on their attribution to a name, which allowed "to control the production of sense".[194] Such approach would reject all statute of text-book to an anonymous manuscript, however, "[…] it sets with the author's name (cloaked, disguised, usurped) confirm the rule of individual assignation of literary works precisely when deviating from it,"[195] reason why now in manuscripts, the assignation of the text to a particular individual appears. During colonial times, satirical production is noticeable; there was a big quantity of political libels and clandestine satirical pamphlets printed, as well as manus-

193 *Ibid*, pp. 131, 134.

194 See on the topic Michel Foucault's reflections on the death of the author, "¿Qué es un autor?" in: Michel Foucault, *Entre filosofía y literatura,* Paidós, Barcelona, 1999.

195 Roger Chartier, *El orden de los libros. Lectores, autores y bibliotecas en Europa entre los siglos XIV y XVIII,* Gedisa, Barcelona, 2000, p. 66.

cripts[196] of impossible attribution, which, added to Rivas' scientific pretentions, linked to Hermeticism still (it is important to point out that the attribution of works was born with the objective of classification in a context of diffusion and authenticity of knowledge, or rather, the control of the orthodoxy, reason why many authors were interested in remaining unclassifiable), complicates the problem of authorship since the authenticity of an alchemical work is purposely dubious: "it is convenient to remember that, as opposed to current times, the antique unknown author kept their work safe attributing it to a figure of recognized prestige. Instead of committing plagiarism and attributing it to themselves, the alchemist wrote their own work and gave it relevance by renouncing it."[197] The context of censorship that pushed Rivas to create strategies of criticism and dialogue: behind fictitious characters and wordplays, real characters are found.

In the trial against fray Manuel Antonio de Rivas, legitimation (attribution) is not a matter of property systems and agreements between bookmakers, but a notary certification appended to the manuscript as evidence against him (censor's appropriation), that stops being anonymous in order to be accused by supposed confession. The authenticity is a notarial certification of fray Antonio Maldonado, against whom there was a struggle for the government of the province and who appears parodied in *Lunar syzygies and quadratures:*

> I Sir, answered the Materialist, have strolled through that whole country, and met a countless amount of watchers of other people's lives; yet about lunar movements, I have only heard of one Alma-

196 Alberto Blecua, *Manual de crítica textual*, Castalia, Madrid, 1990, p. 224, based on Iris Zavala, *Clandestinidad y libertinaje erudito en los albores del siglo XVIII*, Ariel, Barcelona, 1978.

197 Juan Esteva de Sagrera, "La química sagrada. De la alquimia a la química en el siglo XVII", *Historia de la ciencia y de la técnica,* Akal, Madrid, 1991, p. 28.

> na Kista, that spends his time on those trifles, while he could use it in a more useful way in forensic formalities, such as: the transfer of parties in view of instructions, the writing of approvals, the accusation of rebellions, the issuing of judicial orders, etcetera, which is a science of notaries and is already in fashion.[198]

The matter of whether the work of an author born in Spain should be considered Novohispanic rests pending, which can be solved by the criterium of residence: Rivas had lived in New Spain for around thirty years when he wrote the tale that circulated in the Province of Yucatán.

Dissident written works force the reconsideration of literary history categories to clarify the inconsistencies that tend to become molds that make the comprehension of the dialogue between traditions difficult by marking continuities in apparently dissimilar eras. The notion of genre's retrieval is fundamental when sketching the limits of the literary,[199] and under this aim the relationships between the main genres and textual traditions in which *Lunar syzygies and quadratures…* is inscribed will be established: Satire, imaginary voyage and utopia.

198 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 88.

199 In one of the more critical approaches on the problems of literary history it has been demonstrated how promising the history of genres could turn out to be. See René Wellek and Austin Warren, *Teoría literaria*, Gredos, Madrid, 1993.

Laughter in the face of censure

> Hail, Satire! Hail, clear-eyed, sharp-tongued, hot-tempered, outwardly disillusioned and secretly idealistic Muse! Mother of comedy, sister of tragedy, defender and critic of Philosophy, hail!
>
> GILBERT HIGHET[200]

As a literary genre, satire descends from the classic Greco-Roman tradition. In its origin, it adopted the form of a monologue in improvised verse, with no logical structure, in a prosaic, colloquial, and even obscene language; later other models appeared, like parody-sermons and invectives, that were the guidelines for a manifest diversification in pasquinades or lampoons, libels and pamphlets with a noticeable political and anticlerical nature. Some anthropological approximations to satire[201] have an established origin in certain attitudes of man that translate into two forms of expression: the libel (a verbal duel, a curse or a magic word that could change the fate of its victim) and the farse (a fantastical and inversed vision of the world). Both, libel and farse, fulfill a liberating function, that relates them to the Roman saturnalia and the carnival, "Not only is satire found occasionally associated to such festivals, but in all good satire we find many elements of farse and anarchic parody from the very Aristophanes."[202] Farse and a carnival-like vision are the bases on which disguised and fantastic worlds were created, like those used by the satirical author.

200 Gilbert Highet, *The Anatomy of Satire,* Princenton University, New Yersey, 1962, pp. 243–244.
201 Similar to the one of J. C. Hodgart, *La Sátira,* Guadarrama, Madrid, 1969.
202 *Ibid*, p. 21.

In the genre's history, it is possible to distinguish stages that foster and others that hinder the satirical production and that condition a certain tone. It has been said that satire has the tendency of appearing in times of political unrest; nevertheless, satire has appeared in stable societies as well as in unstable ones, renascent or decadent, restrictive or free,[203] as a form of negation and interrogation of the *Status quo*.

Due to the multiplicity of forms it adopts,[204] either for using other genres (narrative, lyric) as a vehicle or for parodying other textual types, the outline of the satiric genre has not been defined, and the criteria for its organization and definition are many. Some critics try to recount its resources and make an inventory of its themes, or to group cases according to a previously developed classification, like Gilbert Highet, who adverting to his way and strategy, divides satire in three big groups: monologue, parody and tale (with the possibility they are combined in a text).[205] According to this classification, *Lunar syzygies and quadratures…* belongs to the category of tale, that includes a monologue, the one of the French traveler, besides the fact that the form or frame lies within epistolary tradition, since there are no signs of it parodying that textual type. Highet considers the portrayal of a deteriorated world, or one that contrasts to ours, as a main resource. This distorting mirror resource has connections to other genres like the utopia, the stories of travels and adventures, that function as intermediate stages in the evolution of a genre, that in the XX century, is characterized by the use of science and technology in the construction of a prospective vision: science fiction.

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203 Leonard Feinberg, *Introduction to satire*, Iowa University, 1967, p. 42.

204 Given its nature of abundance, variety and distortion of satire, it took its name from the Latin *satura*, meaning full, saturated, and that designated a plate overloaded with vegetables and legumes.

205 Gilbert Highet, *The Anatomy of Satire,* p. 114.

Satire must be distinguished not only by its intention, but for its reception: the effect on the reader is the cardinal point. While every satire criticizes the era it belongs to, there are works that are considered universal when they speak of fundamental human flaws, which does not clarify the problem of reception and addressees. Being inseparable from context, satire possesses a multiple-reference nature, its reception is linked to a fluctuating significance: by considering only the literal sense, it escapes the game of double intention and the targets of the criticism remain secret. Satire differs from libel (direct attack) or from parody (whose targets are the textual forms), in the author's aim of attacking without being seen, satire is the genre of disguise par excellence, since the intention of who writes is to criticize and escape the censorship or repression that their opinions could suffer. In satire, due to the superposition of semantic contexts, the act of reading has to be directed beyond the text itself,[206] the meaning offered by the author must be detached from pragmatic reading, from a referential world narrowly related to circumstances and characters identifiable only by those who share them. Satire resembles those literary procedures that say one thing and mean to say another,[207] like metaphor or irony, and which imply a challenge to interpretation, that is, satire almost always purports to be something different to what it really is.[208]

Under the consequence of this duplicity, deciphering the hidden meanings requires the reconstruction of this world of suppositions that is shared with the author. Thus, an effective resource for identifying satire or irony is to confront what the author says and what we believe to know about the topic; in Rivas one can

206 Linda Hutcheon, "Ironía, sátira, parodia. Una aproximación pragmática a la ironía", in: *De la ironía a lo grotesco*, UAM, México, 1992, p. 175.

207 Wayne C. Booth, *Retórica de la ironía*, Taurus, Madrid, 1989.

208 See Leonard Feinberg, *Introduction to satire.*

perceive this voice of an ironist who renders confusing what he purports to believe, as well as what we assume he really believes. The distortion or fictional mask implies disorder to some extent: reason is used to create apparent nonsense, that is why this genre demands unfolding the reference and the structure that leads to the boundary of other genres.

Before science fiction

Pondering about the birth of science fiction, as a literary genre, implies establishing the point in which scientific knowledge entered literature, either to fulfill the function of plausibility, or to try and lead imagination to more possible dreams. The trip to the Moon, as a topic, opens a path in this sense. Once fiction is materialized, literature continues testing the relationship of man and space: today we write about the colonization of Mars and support many experiments that try to simulate how life in a planet with different environmental conditions would be, just as fantastic (and not so fantastic) travels were written by Lucian of Samosata, Cyrano de Bergerac, Edgar Allan Poe and Jules Verne. Among these authors we find nuances that impede the grouping of their work in one only genre, even if they speak about the same topic; for some, fiction works as a resource of satire and only since Edgar Allan Poe, according to Julio Cortazar (although Borges[209] would say that it was since Kepler) it is attempted to create a trip applying scientific principles in order to make it plausible. If we analyze with detail, we would find the intentional use of knowledge from the time for the construction of the imaginary voyage in other texts; reason why such stories could be characterized as science fiction, even if

209 Jorge Luis Borges, prólogo a *Crónicas marcianas* de Ray Bradbury, Minotauro, Mexico, 1994, p. 7.

they have different functions and structures, they almost always hold a subversive intention.

There are two inverse perspectives surrounding the origin of science fiction: one sees in Verne and Wells the beginning of the genre, while another one considers it a later stage in the history of an evolution. According to Jean Gattegno,[210] science fiction was born along with applied science, and before it is impossible to speak about science fiction; only technological progress allowed the construction of other apparently fantastic, but not entirely implausible, worlds. In this sense the founders of the genre would be Jules Verne and H.G. Wells, who achieved the establishment of the balance between fantastic illusion and scientific plausibility. To Darko Suvin,[211] although having been baptized until the xx century, there were previously other precursors: Science fiction existed since Lucian of Samosata and encompasses the "subgenres" of the Fortunate Isles, utopias, fabulous travels, planetary novels, anticipations and dystopias.[212] These manifestations have been classified as literature or minor genres, which is why so few have been included in literary histories.

When science fiction appeared as an anticipation, it was seen as many things: a branch of adventure literature, a form of fantastic literature or a modern manifestation of traditional utopic narration.[213] Based on these kinds of narration, Suvin speaks about science fiction as cognitive estrangement literature (a term taken from Bertolt Brecht), which is the formal outline of these texts, where the imaginative framework prevents the direct verification of referents. In its beginnings, science fiction was represented as

210 Jean Gattegno, *La ciencia ficción*, FCE, México, 1985.
211 Darko Suvin, *Metamorfosis de la ciencia ficción,* FCE, México, 1984.
212 *Ibid*, pp. 11–35.
213 Jean Gattegno, *La ciencia ficción,* p. 117.

demystifying satire from a frame of knowledge that had not yet entered the paradigm of positive sciences; using this perspective as a starting point, many authors would turn this literature into a diagnosis of the future. With this idea of anticipation, the change from space to time occurs: before, unknown territories were explored, subsequently, a prediction of the future is sought.

Once named as such, science fiction spread out into different branches, although its history goes from voyages, along with utopia, to interstellar flights and anticipation novels, the dominance of this kind of literature in certain eras appears marked by social expectations: if before it was a subversive satire, later, interest moved to the yearning of progress and the possibility of outer space conquest; around 1950 there was a real boom of this literature, much of which came to be considered "Para-literature" due to its low quality; nonetheless, the critical branch prevailed in the anti-utopias in the style of Aldous Huxley and, currently, the genre has branched in two directions: scientific prospection and social criticism.

The genre, although it is imagination or "fantasy" literature, is not proper fantastic literature,[214] since the attempts of authenticity are rooted in the knowledge of an era. Another trait that distinguishes science fiction from fantasy is the cognitive dimension it is based on: the cosmological and anthropological rules that rule the author's era enter "a developed contradiction, a real unreality, with humanized human beings."[215] Science fiction must not be defined

214 The fantastic is distinguished by the categories of the marvelous and the extraordinary: the former implies a world ruled by different laws (science fiction would fit in the category of the instrumental marvelous, where undoable, but not entirely impossible, technical advances appear), and the latter a fact that escapes the ordinary; the fantastic would be an undefined territory between these two ends. See Tzvetan Todorov, *Introducción a la literatura fantástica*, Ediciones Coyoacán, Mexico, 1995.

215 Darko Suvin, *Metamorfosis de la ciencia ficción,* p. 10.

in function of science or the future, but rather as an imaginary narration whose literary resources are dependent on a place and characters significantly distinct from the eras, places and empirical characters. Referentiality transitions to a mirrored game, where inverted images are opposed to empirical contexts, a maneuver that is exemplified in *Utopia* by Tomas Moro, in which the English society is first presented with its vices in order to later make that trip to a place which does not exist but could, a resource employed by Swift in *Gulliver's Travels* and by Voltaire in *Micromegas*, the distorting and deforming mirror, where size and non-humanity (animality and extraterrestrials) are useful to question humanity.

Every literary production must adhere to its historical semantics, and although meanings change, there are many strategies that connect certain stories and, in some cases, contexts. On occasion, formal similarities are also ones of historical moments: when one moves from religious truths to knowledge truths,[216] or when flights of the imagination overtake a previous order. In this sense, voyage literature has been a genre in which it is possible to observe the cultural shocks or the clash of visions about the world. The tradition of the traveler's tale perhaps began with Homer's *Ulises*, Persian stories about fantastic places, and the commercial catalogues (though only with Marco Polo an outline with a literary intention along with an informative one already begins to form), it would continue with the travels to the Holy Land and the apocalyptic visions; now as a phenomenon linked to the endeavor of discovery, more specific subgenres appear, among them are the tragic-nautical (shipwrecks), logbooks, scientific essays, and the relationships that began in epistolary style only to become historic narrations

216 The coincidence of such a historical context of knowledge crisis is observed, besides in Rivas, in Luciano de Samosata and Cyrano de Bergerac, mainly.

with dedications and other formulas.[217] A fundamental part of this tradition would correspond to interstellar trips, among which a recurring theme is the trip to the Moon.

The bond between man and the universe has appeared in pages of literature history as well as history of science, but the place held by the Moon in imagination goes beyond what it could represent in a technological civilization, it always keeps its dimension or poetic devotion because it represents the possibility of estrangement and is the symbol of the search for knowledge: "out of our limited framework and certainly tricky."[218] Just as in alchemy the boundaries between science and literature remain vague, on the Moon live science and poetry together; even when Galileo speaks about the Moon as a tangible object of knowledge, in his language a "rarefaction or suspension"[219] remains.

A recount of trips to the Moon in literature will not always be complete, because just like Rivas' tale is not well known since it remained in censorship, there are always gaps in every history. The following is an attempt to draw a chronology on the theme of occidental tradition.

The first mention of a trip to the Moon appeared in the I century in a philosophical dialogue by Plutarch entitled *About the visible face of the Moon,* and consequently in the II century, in an episode of *A true story*, by Lucian of Samosata; later, in the XVI century Ludovico Ariosto, in a passage of *Orlando furioso*, he uses that image; during the next century the topic was more recurring, there were: *Somnium Astronomicum* (1634), by Johannes Kepler; *The man in the Moone* (1638), by Francis Godwin; "States and Empires of the Moon", the

217 Giorgo Raimondo Cardona, *Los lenguajes del saber*, Gedisa, Barcelona, 2000, p. 315.
218 Italo Calvino, *Punto y aparte. Ensayos sobre literatura y sociedad*, TusQuets, Barcelona, 1995, p. 205.
219 *Ibid*, p. 208.

first part of *The other world* (1645), by Cyrano de Bergerac; *The discovery of a world in the Moone…*,by John Wilkins; Gabriel Daniel's *Voyage of the world of Descartes* (1690). In the XVIII century, *Iter lunare* or *A voyage to the Moon* by David Russen was published in London, in the year 1703; Diego Torres Villaroel *Viaje fantástico del gran Piscator de Salamanca. Jornadas por uno y otro mundo descubrimiento de su sustancias, generaciones y producciones…* published in 1724; in Amsterdam appeared *Le voyageur philosophe dans un pays inconnu aux habitants de la Terre* (1761) attributed to the pen name Daniel de Villeuve; then, fray Antonio de Rivas wrote *Syzigias y quadraturas lunares…* in 1775*;* a trip to the Moon appears in an episode of *The adventures of the Baron of Münchhauss* by Gottfried A. Bürger (1786); *Static voyage to the planetary world* (1794) by the Jesuit Lorenzo Hervás y Pandero; *Trip to Selenopolis* (1804) by Antonio Marqués y Espejo, considered a plagiarism[220] of Daniel de Villeuve; *A voyage to the Moon*: with some account of the manner and customs, science and philosophy of the people of Morosofia and other Lunarians in 1827, Georges Tucker; Edgar Allan Poe's story *The unparalleled adventure of one Hans Pfall* (1845) and Jules Verne's *From the Earth to the Moon* (1862). Also, *The First Men in the Moon,* by H.G. Wells, in 1901. Italo Calvino, who recovers the humor of the first tradition's satire of the Cosmicómicas of 1963, as well as Calvino's *History of Astolfo on the Moon,* in *The Castle of the Crossed Destinies, 1973.* Cortázar makes reference to other trips to the Moon:[221] *The flight of Thomas O'Rourke* (of which he mentions no author), *L'homme dans la lune, ou le Voyage chimerique fair au Monde de la Luen,*

220 Pedro Álvarez de Miranda, "Viaje de un filósofo a Selenópolis (1804) y su fuente francesa", in: Isaías Lerner, Robert Nival y Alejandro Alonso, *Actas del XIV Congreso Internacional de Hispanistas*, Tomo III, New York, 2001.

221 Julio Cortázar, footnotes to "La incomparable aventura de un tal Hans Pfaall" in: Edgar Allan Poe, *Cuentos I 2*, Alianza, Mexico, 1997, pp. 58–63.

nouuvellement decouuert par Dominique Gonzales… that is assumed to be a translation from English by one Mr. D'Avisson, and Mr. Locke's *History of the Moon*, published three weeks after Poe's tale, which is a text that circulated as truthful, deceiving a certain public that did not know about astronomy topics in their time.

These narrations can be divided into two big groups: in the first ones, the trip to the Moon is an archetype of the impossible and the satirical intention is clear, while in the rest (maybe starting from Kepler and Cyrano de Bergerac) it begins to be envisaged as a possibility, when trying to create a realistic way to reach the lunar orb. Many times, the matter of realism in these tales depended on scientific criteria: the travel proved credible or it did not, in proportion to the degree in which the author adhered to discoveries of astronomy, physics, math…, while in stories far from this scientific paradigm, realness should be rated according to the internal narration's logic, that presents a universe organized under different laws and forms of knowledge specific to an era. It would prove useless to try and challenge the veracity of certain data within the current parameters of science[222] in texts whose intention is not accuracy and/or truthfulness, but the invention of an alternative world, while still keeping some load of reality.

In this recount of trips to the Moon in literature one should highlight not only the thematic coincidence, but the borders that approach certain textual types that cannot be called science fiction either. It is not possible to encompass said tales into a same denomination, but when they were written as participants of various traditions, they contributed to the birth of another genre, they are texts that allow the discussion of science fiction before science fiction.

222 In this revaluation of many of the mentioned authors a relationship with alchemy has been supposed, such is the case of Cyrano de Bergerac and Diego Torres Villarroel.

Fiction, utopia and vision of the other

> I decided to lie, yet, mind you, with more honesty than the rest, since there is an extreme about which I will tell the truth, I will tell many lies […] I write, then, about matters I have never seen, adventures I have never heard nor anyone has told me, about things that absolutely do not exist nor seem to be able to ever exist. Thus, my readers will do well to not bestow any credit upon them.
>
> LUCIANO DE SAMOSATA[223]

In *Lunar syzygies and quadratures…* the real and fictitious planes constantly merge into each other: there are capricious mixtures between mythical and contemporary characters of whom, in turn, there is no certainty about which ones are an invention and which ones existed. The most transcendental extratextual reference is the one that implies the performance of the interstellar travel: the machine built to reach the Moon is taken as a true occurrence; the character that helped the protagonist to create the flying vessel, one Desforgues, really existed, he was a literate French man of the XVIII century, Canon of Étampes, who always caused controversy around his eccentricity, like with the creation of a flying machine, with which he jumped from certain height and hurt his arm in the fall. Undoubtedly, this character is the very Dutalon, since they are from the same place: Étampes, France.

The mixture between Deforgues and Dutalon reminds of the oneiric mechanism of displacement described by Freud,[224] and at all times the narration's paradoxical and fantastical nature, the

223 Luciano de Samosata, *Diálogos–Historia Verdadera,* Porrúa, Mexico, 1991, p. 184.
224 Sigmund Freud, *Obras completas*, Tome V, Amorrortu, Buenos Aires, 1989, p. 637.

oscillation between reality and fiction in the text suggests an amalgam of dream and wakefulness. The trip to the Moon or the literary voyage can be done while sleeping, and it is not known to which extent it is the transcription of a dream or a literary fiction in the form of a dream: "seeing myself in advantageous position to take a literary trip to this planet; I sailed in my Flying vessel."[225] This daydream resembles an ironic *First dream* that does not lead to God or to knowledge, but to the silver Moon.

Lunar syzygies and quadratures' structure as a tale is formed by a macro-text, the letter, written by the secretary of the lunar Atheneum, and it covers events narrated through different voices: there are monologues and dialogues intertwined, mathematical formulas, references to characters and mythical landscapes, and figures hidden in anagrams. The secretary's letter tells about the visit of Dutalon and the way in which the denizens of the moon figured out who they should send the verification of the watcher's calculations to, as a kind of sub-narration embedded in the main one, which creates an autoreferential circle: the letter finds the name of its addressee while it is being written, the bachelor don Ambrosio de Echeverría, who knows the watcher of lunar movements, according to what a Materialist from Yucatán that came by flying informed the Anctítonas.[226] The letter has a structure in abyss: stories within stories, structures within other structures.

The epistolary form was employed in New Spain as a channel of discussion among astronomers or "scientists", which to an extent justifies the choice of this writing model, in addition to the fact that the letter is a subgenre of voyage. The mixture of

225 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 86.

226 González Casanova no se percató de este círculo referencial y supone que la carta es escrita por uno de sus destinatarios. Compruébese en *La literatura perseguida en la crisis de la Colonia,* p. 96.

heterogenous elements (stages and characters) and the multiplicity of voices show a baroque character, however, scientific intentions would lead to a different classification, and the affirmation should be nuanced: it is a text with baroque form and with enlightened content, that in reality are not totally, since the procedure in zigzag (from the evocation of a fact another one appears), the possibility of leaving a place for the reader that the author-narrator offers, are traits of voyage literature. Classification paradoxes reappear in the scientific terrain: *Lunar syzygies and quadratures…* is located in the transition of two world views, Hermeticism and Mechanism, whose theses would be defended by Dutalon, the spokesman of the new science's sources, along with the watcher of lunar movements, who performed correct calculations of the lunar syzygies and quadratures, and who would be the second one in this knowledge hierarchy, that one Almana Kista or rather the Alamanachist, the one who made the 1775 almanac: fray Manuel Antonio de Rivas.

A satiric strategy used by Rivas, and that gets this genre closer to Renaissance utopias, is the "Other world" tale or of a world upside down. In this game of compositions, the comparisons go from the criticism of a social order to the relativity of world visions, that shows in the contrast between the Lunar Government and the Terrestrial one, a specular game in which the former proves more perfect: a utopian society serves as comparison to a real one, in this case the one from Yucatán, the Novohispanic, the Spanish one… or the whole humanity. If utopia is the satirical traveler's destination, that place which does not exist is an ideal society, imagined inverse to ours; this way a criticism is made towards an "irrational" world, when opposed to a "rational" one. Thus, after following the itinerary proposed by the President of the Atheneum, Dutalon describes the lunar utopia and the *topos*:

> What marvels, and beauties of nature, that here are deemed ordinary, yet cannot be contemplated without astonishment and wonder! What sweet government; and adapted to the surroundings of the Anctitonas! Certainly, there on our Earth globe, given its constitution, is need of distinction of class; in which the fate of the rulers is the unhappiest one, for if the ruler reigns wrongly, everyone will he displease; should he reign rightly, few will like him; being very few the lovers of justice, and equity.[227]

Other criticisms originated from the clash of different world visions are the ones directed to Muslims and Jews. When the Moon dwellers receive the watcher's letter and verify the accuracy of his calculations, they conclude that all the syzygies, quadratures and new moons are correct, except the Arabic, Jewish and Mohammedan ones, which were rejected "Everyone agreeing that these people were the most stupid and idiotic in the world; since they still await the coming of the promised Messiah".[228] These attacks are a pretext to criticize the licentiousness of the customs, because the Holy Book of the Muslims, The Quran, is labeled in this aspect and not in others: "The Quran gives free rein to a sensual appetite, to plunge it into the filthiness of the flesh". The synagogue is called a "collection of carnal men, only attentive to earthly things". On the topic of the reigning debauchery in the province (demonstrated in the testimonies of the process), the criticism is upgraded by the Moon dwellers, who, when they observe the Earth and the meridian in which Yucatán is situated, they evaluate the town with use of the argument of climatic determinism:

227 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 90.
228 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 84.

> In this consideration, you must suffer a vertigo or permanent lightheadedness, that impedes the functions and reflections of a rational soul; resulting in a people with no hint of brain, giving into profanity, luxury; to banality, to idols, to perfidy, to treachery, to deep simulation, to sordid greed, to violent ambition, until shamelessly stepping over the sacred […] a more than brutal sensuality, which only ends with death; an inherent mendacity, volatility or inconsistency of temperament, and other unworthy follies for a rational nature.[229]

In this sense, the materialist from Yucatán (of whom Rivas speaks in his defense in order to let everyone know he will never reveal his identity), who not even the Devil wants in his domain, mocks the watcher, ironically saying that he should rather pursue forensic formalities "such as: the transfer of parties in view of instructions; the writing of approvals, the accusation of rebellions, the issuing of judicial orders, etcetera"[230] usual occupations of the Holy Office that have become a "fashion", like those performed by Maldonado, contestant for the government of the province, a witness and later notary of the cause against Rivas. To those "trifles" are added the registration activity of consultation book indexes that someone performs in order to "become visible to the masses in this way, given that he can in no other one"; according to Brito's accusation, Rivas' statements, the pasquinades in Maya, and the fact that Maldonado did not keep his vows was all already known.

All voyage literature, all spatial displacement, implies a cultural displacement, an investiture of the Other: on one hand, there is the utopic society of the denizens of the Moon, facing the Earthling

229 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 89.
230 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 88.

anti-utopia; on the other, the French citizen, facing the citizen of Yucatán. The representation of the foreigner, the alien, the Other, comes into a second plane, it coats a veiled discourse in which one culture is regarded as superior: the French one. Along with French superiority, this Spaniard (Rivas) includes himself indirectly: he is intelligent because the rest has no access to his coded language, only the cultured elite. Another fact about the French influence, or the intertextuality in Rivas' story, is when the French traveler promises a text to the Moon dwellers, an idea that had already been formulated by Voltaire in *Micromegas*.

> Anyhow, Monsieures, the time is nigh for me to get on the globe from where I came from, and retire into my beloved floating island, in order to begin the work of which I spoke to you. I promise to give you a copy of it in another one of my voyages, that way you can add it to your archives or memoires.[231]

> He promised them to make a beautiful philosophy book, written with the finest letters for their use, and that in this book, they would see the depth of things. Indeed, he gave them that volume before his departure: it was taken to Paris to the Academy of Sciences, but when the secretary opened the book, he saw nothing but completely blank pages: "Oh! he said, I had thought as much".[232]

The reminiscence of the French culture in Rivas' work exists not only in explicit references to French characters, rather they extend to the formal plane. It is known that during the XVII century, the

231 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 90.
232 Voltaire, *Cándido, Micromegas, Zadig,* Rei, Mexico, 1991, p. 195.

tendency of French utopia was a political reflection that, struggling to express itself, prolonged the genre of imaginary travels, a tendency in which this tale fits for being an interstellar trip and a social critic. And beyond the matter of genre, it is no coincidence that the representative of humanity on the Moon is precisely a Frenchman. The phenomenon of symbolic inauguration of the other holds, additionally, the identity problem for the Mestizo or the Creole, in this case for the Spaniard based in the New World. The existence of a state of cultural dependence in colonial literature has been vastly reiterated,[233] in which the main model is France, especially during the XVIII and XIX centuries, but little has been highlighted about the forms of appropriation and mixture between the foreign and the native. Rather than striving for a literary history at the service of national consciences, the dialogue between nations should be considered, because cultural borders and political ones never agree.

A baroque philosophical tale

A cryptic work like Rivas' owns a revealing nature inasmuch as it disturbed a literary system[234] because of the defense mechanisms it compromises and that are contrasted in its context where reception is beyond the horizon of expectations. In spite of the great satirical production in the colonial time during the XVIII century, Rivas' work is innovative, since no imaginary flight has been registered in New Spain so far (except for the First Dream, though it belongs to the poetry genre), neither has been the handling of

233 Daniel–Henri Pageaux, "De la imaginería cultural al imaginario", in: Pierre Brunel and Yves Chevrel, *Compendio de literatura comparada*, Siglo XXI, Mexico, 1994, p. 126.

234 Thus the hypothesis about the disturbing nature of a foreign work (different to the canon) set in another context is confirmed. Yves Chevrel, "Los estudios de recepción", in: Pierre Brunel and Yves Chevrel (dirs.), *Compendio de literatura comparada*, p. 172.

fiction in a narrative of select content addressed to a circle of cultured readers. Among the studies about Novohispanic literature, the approach as a documentary source predominates, and those that focus on the literary aspect highlight oral traditions until almost reaching the limit of denying the existence of a cultured satire, like Pablo González Casanova and José Miranda in *The popular satire of the Enlightenment, The anonymous satire in the XVIII century,* as well as in *Satire and other ways of criticism or subversion in Novohispanic literature,* by Isabel Terán.[235] All the satirical works have not been compiled, many of which are kept in the archives of repression; their recovery would make a (re) definition of the genre possible, starting from the study of cases in order to specify its particularities in the New Spain, as well as its function and its connections to other genres, but above all to demonstrate that frontiers between official and non-official, between repression and subversion, are imprecise.

The rupture or innovation and the continuity of *Syzygies and quadratures…* seen from the frame of tradition force the tracking of footprints beyond geographical borders, to conclude with the affirmation that the work is a reflection or an echo of Voltaire in the mirror of New Spain, nevertheless, from the frame of reception all influence is always mutation and the text is a fabric of voices doomed to infinite recontextualization: the targets of criticism are not the same, and the baroque and Hermetic influences remain.

The story's criticism can be divided into social, theological, scientific and even philosophical ones; the two second ones would be classified within heresy, but an enlightened heresy -as González

235 Isabel Terán, "Los estudios sobre la sátira novohispana", in: *Saber Novohispano III*, UAZ/COLMICH, Mexico,1999. *La sátira y otras formas de crítica o subversión en la literatura novohispana*. Factoría Ediciones, Mexico, 2015.

Casanova names it-, which comes from the clash between dogma and rationalism. These protests are not explicit: after having demonstrated the scaffolding of fiction, other heresies appear, such as the incorrect interpretation of the Holy Scriptures or, according to some witnesses, the denial of sacraments, since in one occasion a fellow Franciscan visited Rivas and "he found him writing and, taking away the paper he was writing in, he found that in it he proved [in a syllogistic way] the non-existence of purgatory, and that having reprehended him about it Rivas apologized saying he did it for mischief of the understanding […]"[236] Mischief that in the voice of the Moon dwellers gives us the position of lunatics in fiction, who do not know what else to read: "We have attempted to shape this panegyric, or invective if you will, in retaliation to the mockery that the watcher communicates us in his letter of the 5th of the Month of Epiphi",[237] with the irony of being simultaneously panegyric and invective (antonyms) and a letter of which we will never know the recipient.

The Moon as a road to knowledge transgresses the prohibition of knowing that which lies above, when Phaeton set it on fire, he performed the alchemical transmutation after a failed attempt of liquifying gold with nitric acid; a symbolism in which an unstable balance is held, an unfinished dialogue, a letter that when written looks for its addressee. Although *Lunar syzygies and quadratures…* can be seen in the mirror of "Frenchness", it has the abyss of the baroque, suspended of such circularity in the representation. Fray Manuel Antonio de Rivas was an enlightened person that mocked the characters of his time and who expressed a posture in face of forms of knowledge that coexisted during the XVIII century: he

236 Rec. 1187, vol. 2, Inquisition Repository, AGN, s. 39.
237 Exp. 1187, vol. 2, Inquisition Repository, AGN, s. 90.

mocks the Hermetic knowledge and praises experimental science; he is between two traditions, but everything points towards his inclination to one. In this swaying a paradox is held, one of a knowledge for the initiated and a public knowledge that must be hidden from orthodoxy.

The relationship censure-autocensure as a creativity engine fosters a diversification of certain textual types: *Lunar syzygies and quadratures…* is atypical in New Spain for its theme and strategy, and at the same time it is a representative of the mentality change that was experimented in the XVIII century, it is an amalgam of literature and science. It could further be asked, to which extent can the atypical be representative?[238] It is atypical because convent production is basically sermon, and perhaps poetic, not propagandist nor libelist, besides it does not touch on subjects of interstellar trips and the resource of imagination is controlled under a bold rhetoric. Atypical, too, because most satires of the XVIII century are essentially popular, and not cultured as this one is. Representative of the change of mentality in the XVIII century that affected the spheres of knowledge and politics. Fray Manuel Antonio de Rivas' case is a testimony that complements Monelisa Pérez-Manchard's statements about the mentality change during the XVIII century, although it should be added that said change did not only occur in the religious and political spheres, but also in the forms of knowledge that destroyed the hegemony of orthodoxy in sight of experimental science and its enlightened frame that would make way in New Spain.

238 The matter of typicality, or rather, of how through a case a historical-cultural grid or scheme can be explained; it is a debate on the relations between the elite and popular culture that has occurred inside the historiographic current denominated "cultural history".

It is literally in the change, at the border, hence the classification paradoxes. How to name what is changing? Heretic or enlightened one? Or nor heretic, nor enlightened one? Literature[239] or science? I opted for the formula: philosophic tale with a structure *mise en abyme*. It is not only a "social", political or anticlerical satire, it is a voyage in which dialogue between knowledge and ideas is held, it is a letter with one and many addressees that seeks the experience of otherness and disagreement as an alternative, where the voyage is the condition for introspection, or where science is literature.

239 For a further, more exhaustive research on this topic see: Alcalde-Diosdado Gómez, Alfonso. *El hombre en la Luna en la Literatura*. Universidad de Granada, 2011.

About the translation

The story hereby published and translated from Spanish is taken from a booklet that is kept in the Inquisition Collection (file 1187, volume 2, AGN) from the General Archive of the Nation in Mexico, along with the almanac and two libels written in Maya attributed to Manuel Antonio de Rivas and other documents of the inquisitorial process. The first salvage of this work was made by Pablo González Casanova in 1958, later Ana María Morales published the tale in a journal of INAH in 1994. There are two editions published in Spanish, one by Carolina Depetris (UNAM 2009) and another one by Carmen F. Galán (Factoría-UAZ 2010).

This translation aims to make this elusive text, along with its surrounding history and curious circumstances, known and available for a greater number of readers, while it preserves the original meaning and sense of its encrypted and hermetic nature. It is worth mentioning, and only fair to warn the reader, that the text contains many words which were invented by the author, as well as anagrams concealing names, and other phrases which refer to alchemical tests or are disguised criticism and satire. The references and quotations, as well as some terms, may be encoded messages that admit several interpretations. For all these reasons some wor-

dplays were kept, along with toponyms and names, in an effort to preserve the message as untouched as possible. Some of the names, terms and quotations were translated to its current scientific equivalent or in some cases, remained in the original language; they are documented in foot notes.

One of the challenges in the translation was to maintain the style of writing and the original syntax found in eighteenth century texts in Spanish and transport it to contemporary English, keeping the fluency and balance between them. Given the nature of the text and the sociocultural context in which it was written, the Yucatán peninsula, where many interactions with European cultures took place, the author was influenced by French, British, and Latin books that sometimes were forbidden, like the mention of the Anglican Tobias Suvirnethon, the main cause of censorship. This characteristic of the text allowed the synergy of philosophies and scientific terms in a stage of universalization of knowledge.

LUNAR SYZYGIES[240] *AND QUADRATURES*[241]
adjusted to the Mérida of Yucatan meridian by an anctitona or denizen of the Moon, and sent to the Bachelor Don Ambrosio de Echeverría, tuner of funeral Kyrie in the Parish of Jesus of said city, and to the current professor of Logarithmic in the Town of Mama of the Yucatan Peninsula, in the year of the Lord 1775

Mister Bachelor:

Some time ago an anonymous letter with the date 5th of the month Epiphi, from the Nabonasar year 2510 was received. The earthling who wrote it calls himself the watcher of lunar movements, as he shows in his nuncupative letter, presenting us the lunar syzygies and quadratures with the modern Judaic, Nabonasar,[242] Atic, Egyptian, Arabic, Persian Neomenias[243] dispensed by the year of the Lord 1763.

The watcher, with a dexterous employment of sarcasm that he throws cleverly and seemingly without care, certainly airs some beautiful treats of non-vulgar erudition in his letter. Could you

240 An arrangement in which two or more planets, stars, etc. are in a straight line: When the Moon is in syzygy with the Sun and Earth, there can be noticeable gravitational effects (Cambridge).

241 *Astronomy*. A configuration in which the position of one celestial body is 90° from another celestial body as measured from a third body, typically Earth (*The Free Dictionary*).

242 The beginning of his government gives name to the age that bears his name, and gives place to an astronomical canon that determines the precise occurrence of the lunar and solar eclipses, which means that the beginning of spring starts in Aries instead of Taurus.

243 From the Latin *neomenia*, the new moon or the first day of new moon.

believe, Mr. Bachelor, that we did not know which aerial postilion delivered this letter, nor by means of which plague it entered this hemisphere? Well, it is something that is still ignored to this day. As the watcher would seem as one of the few less impolite and better raised earthlings, we decided to present him a sign of recognition of sorts to the labor with which he honors us, and the appreciation that we have towards his merit, candor and humanity; we compensate gift with gift.

For this end, hailing from the different regions in which this lunar orb is divided, that in the Selenography[244] you call the Plato and is the Country of Chimeras, the best computers versed in the history of the globe gathered in order to discuss the argument, registering in the lushest library that we have here all kinds and genres of news belonging to the memorable ages of the terrestrial orb, after few milliards of years. Because of the most remote and lamentable catastrophes that of which we have recollection below I will give a short summary, and it shall be the same you may already know for it figures in your Mythology (Ovid, *Metamorphosis,* book 2*).*[245]

Our historians and chronologists announced, of course, that all the syzygies, quadratures and new moons written on the face of the nuncupative letter adjust punctually to the roots or sources from which they derive, in such a fashion that, were they in use, there would be nothing to amend or correct. Yet in regard to the Arabic or the current Mohammedan ones, which are unremarkable, many felt that the watcher´s work has been unprincipled. Because, they said, what serious pen could be employed in calcu-

244 The branch of astronomy concerned with the description and mapping of the surface features of the moon (*The Free Dictionary*).

245 The second book of *Metamorphosis* refers to the story a Phaeton, and in the Renaissance and Baroque was used to represent the astronomical phenomenon of comets.

lations whose character remind the Christians, the religion of a brutal scoundrel that professes a sect utterly opposite to the soft rules of the Gospel? The Koran is a sacred book that leads the spirit to join its creator, but it is sometimes interpreted as letting the sensual appetite loose, to sink it in the rotten ways of the flesh.

On the contrary, some doubted not to maintain that the news of the Arabic years and the distribution of Neomenias should not be aggravating for the lovers of the sciences, and that in this consideration, the years of the Hegira Age and the first Muharram[246] neomenia shall be taken into account. This, Mister Bachelor, is judging with equity.

The same punishment afflicted, more or less, the Judaic years and its new moons, to which everyone agreed that this caste of people was the most foolish and stupid in the world, since they are still waiting the coming of the promised Messiah, just as others await the return of the King Don Sebastián to Portugal.[247] Nevertheless, they ordered me to write down the current Judaic year and the first Tifri[248] Neomenia. And regarding the rest, the modern Jewish and some earthlings could reach an agreement about whether or not the ancient law was imposed to the elders, not as a state of justice or health, but rather as one of sin and death; and whether the Synagogue was nothing more than a collection of fleshly men, obsessed by earthly things, and for that they adored only one true God.

Seeing now the disgraceful end that our ancient monuments had; as you well know, Mister Bachelor, that an inconsiderate one

246 The first month of the Mohammedan or Islamic calendar (*The Free Dictionary*).

247 Sebastian of Portugal (1557-1578), "the one who is longed for", is a monarch figure who disappeared without leaving any heirs, causing the Portuguese people to await his return so as to end the decline of the country.

248 Month of the Hebrew calendar with closest correspondence to the months that mark the beginning of Autumn.

entrusted the governance of the Horses of the Sun to a young, arrogant son, volatile, with only the vane warning of: *medio tutissimus ibis (*you will go more safely in the middle*)*; who wandering through the very vast provinces of the Ether, set all the planets in flames, as well as our orb, reducing everything he found on its surface to dust; while only some Anctitonas saved themselves in the depths of the caverns. Since our memories were engraved in silver sheets, that is the paper of which today we still make use; they could not resist the activity of a ravenous fire.

After all, the vanished Phaeton paid his insane foolhardiness, falling head first into the Po River, otherwise known as the Eridanus. It is very true that luxury, pomp, value, aegis and any other boon of fortune in the palaces "ruled by the Sun",[249] if not adjusted to the inspirations of moderation and prudence, will mercilessly lead to the precipice.

In this memorable fir**e** we fixed our age, according to which this current year is 7914522 of the lunar fire. This number of digits must not be a novelty, being constant in the logs of the majority of the chronologists of the broadened empire of China, the year of the Christ 1444 they counted 88639860 years of the creation of the world. It may also prove important for you to know that our lunar year is made up of 437 days, distributed by 12 months, which are Hydron, Schthyon, Crion, Tauron, Dyaymon, Karkinon, Leonton, Pardienon, Zigon, Scorpion, Foxon, Ogon.[250]

At the verge of the dissolution of the Congress, where I attended as Secretary and Computer, we witnessed how at a distance of two miles and a half (who would have thought!), a car or flying vessel provided with two wings and a steering wheel set where it

249 *Regia solis erat*.

250 The designations of these months correspond to the names of the main constellations.

should be, that advanced piercing our atmosphere with incredible momentum. At the beginning we thought it was all an illusion, given that there is no memory nor tradition of ever having seen in our orb any man in body and soul. We went out to guide him to our Athenaeum,[251] and after having offered us a profound bow, the captain gave us a brief account of his voyage and destination, of which we can only make a minuscule extract, and he shall be able to expand on it as much as he can and want when he is back.

Monsieures, he said, my name is Onesimo Dutalon: I was born in a small place of Bayliage d'Etampe, in France. I did my first studies in my home town, however seeing as the school´s philosophy was useless and that it could produce no big nor small scholar, I moved to Paris, where I devoted myself with tireless application to the study of experimental physics, which is the true one. And with this occasion, after a paused meditation in the works of that spirit of first order of the British land, the incomparable Isaac Newton, I became owner of the deepest arcane geometry.

Once back in my homeland, I cultivated communication and friendship with an ecclesiastic, named Monsieur Desforges, a man who knows how to appreciate the sages' merit, with no respect to faculties, authority nor power. As our friendship was deepening day by day, I decided to give him a proof of my trust by informing him of my endeavor of creating a flying machine, which is the one you see. After an infinite repugnance, I instructed Monsieur Desforges, because he asked so, in all the rules that may lead the practice of the communicated secret. I would not be able to tell you, Monsieur, how the instruction ended. In my regard, foresee-

251 An institution, such as a literary club or scientific academy, for the promotion of learning (*The Free Dictionary*). In New Spain there were gatherings or scientific secret organizations called *tertulias*, probably related with such a place.

ing that, when traversing the air, the stake would be lit for me to be burned publicly at the plaza like a sorcerer when people spotted me, I thought it convenient to carry out some tests before soaring towards the spheres, saving myself in one of the Calamine[252] Islands in the Libya, floating or swimming in the water´s surface, mentioned by Plinius, book 2 chapter 95 and Seneca, book 3 chapter 25.[253]

Having retired, then, unto one of these islands, I made the first test going across all Africa. In the second one, stung by a geographical curiosity, I wanted to examine by myself whether there was any communication around the northern part of our continent, and the American one, and found out they were divided by a strait of the glacial sea. In the third one, soaring even further, I landed on the summit of the two highest mounts on Earth, the Tenerife in one of the Canaries, and the Pichincha in Perú. At the peak of the latter, I had the pleasure of experimenting that *Aqua regia* or *strong water*[254], free from gravity and air pressure, did not dissolve gold, little nor much, as well as that for this same reason, spicy and scathing matter such as pepper, salt, aloe juice, etcetera, had no taste whatsoever. Concerning the elasticity and bounce of air I did too some experiments that are not currently important to mention.

After two months and a half I came back to my residence on the floating island and seeing myself in an advantageous position to begin a literary journey to this planet I embarked in my flying car, entrusting myself to my good or bad luck, the Moon being in dichotomous position with respect to who observes it from the

252 Denomination for the minerals of zinc, carbonate and silicate (Priesner).

253 Both authors refer to the nature of comets and stars in the works he quoted.

254 In Chemistry it is nitric acid (Priesner). In Alchemy Hermetic philosophers do not apply the same definition, but rather refer to mercury that dissolves all bodies with a natural, non-corrosive, dissolution without destroying the germinative bases of metals (Pernety).

Earth, from whose center, according to its parallax, was 59 terrestrial semidiameters away. Given that in my trip I didn't draw away from the equinoctial plane, having traversed 273 leagues of atmosphere, I had the curiosity of throwing a sheet of tissue paper into the fluid I was sailing on, and I observed with great admiration that the paper chased toward the Orient, the rotation that the atmosphere followed along the globe. Before going out of this region there was a cold incomparably more intense than the one I felt in Estotiland[255] in my second test, about which I made a reflection worthy of public attention in favorable opportunity, to support the opinion of a certain modern philosopher, in order of the cause of the cold in the highest places over the sea level.

I had surely traversed 25 thousand leagues, when I simply had to laugh, remembering the terrestrial *tourbillion*[256] of Monsieur Descartes, who taken away by an extravagant imagination, makes the Moon circle around the Earth in the force of its vortex, of which I found no vestige whatsoever. And to be surer, I threw a pipette full of water of the Lethean river to the fluid, that rested immobile in the purest ether. I also thought that if a tower a hundred thousand times taller than the one of Babel were to be constructed there, it would hold eternally without staggering, without motion, without disunion of its parts, nor inclination or any propension towards any centre.

Among that celestial matter (I am telling the truth) I did not feel cold nor heat, even while hurt by the direct sun rays that I congregated at the core of an exquisite caustic mirror and did not ignite nor liquefy several substances set at convenient distance, un-

255 In the cartography of the sixteenth and seventeenth centuries it refers to a region that nowadays corresponds to Quebec, Labrador and New Found Land.

256 Term of the eighteenth century´s experimental Physics, which refers to a circular motion. In the cosmology of Descartes the tourbillions explained the movement of the planets through the Ether.

doubtedly because of the lack of heterogeneous air, I concluded that the catoptrics with its demonstrations has nothing to do in that very subtle and homogeneous Ether.

Anyhow, Monsieurs, Dutalon the machinist said, following the precautionary measures I took for the use of inspiration and respiration in a space where there can be none because of its rarity and disproportion, you need not question me when you see me, that without loss of life I have arrived happily to this orb. I assure you that any Earthling can make the same voyage in their sleep, with as much delight. I continued observing him and philosophizing, and after all I find myself with the satisfaction of getting rid of an infinity of concerns, having registered the clear fountains of which the experimental findings have to be drunk, which is what Martial advised in the epigram 102 book 9: "Believe me, it matters much to drink from a fountain that flows, or perhaps from a dead lake of frozen waves."[257]

And here the president of the athenaeum was about to talk, when a troop of infernal ministers that entered the assembly distracted our attention. The chief, who was of very bad demeanour, explained himself without courtesy in this way: We, by orders of our Prince, go far away from here, as far as the Solar Globe. We lead the soul of a materialist,[258] that at the point of separation of the body was dragged to the gates of hell where Lucifer did not want to receive him, saying he was informed by his minions, all around the Earth, that he is a restless spirit, turbulent; an enemy of rational society and of the spirituality of the soul. That, in his opinion, the mother who bore him was of no better condition

257 *Multum, crede mihi, refert, a fonte bibatur/qui fluit, an pigro, qui stupet unda lacu.*

258 In this sense a materialist is a person who is concerned with logic and reason instead of the truths of faith; a free thinker.

than the fox, the hedgehog, the beetle, and any other vile insect of the ground whose soul dies along the body. That he did not want to increase the disorder, confusion, and horror that eternally inhabits his republic, as it is, with the establishment of an impious one. And that right away, escorted by a troupe of four hundred demons, was taken to that great *Pirofilacio,*[259] the Sun.

Towards the sun, asked the President of the Athenaeum, where the Almighty set his throne and pavilion? Yes, Monsieur, to the Sun, responded Dutalon, because there a natural Anglican from London called Swinden[260] placed hell, who in a dissertation with the verses 8 and 9 from chapter 16 of the Apocalypse aims to persuade that the site of the damned is at its centre, where the demon fixed his throne (scholars` records of the month of March, 1715) and that this is the reason why so many nations on the Earth globe had adored the Sun as God.

It is rumoured, said the President of the Athenaeum, that the fatuous Swinden could have also placed hell with the same right in this lunar orb, for it is constant in our archives that the Moon has had its worshipers on Earth. Perhaps, Monsieur Dulaton, the President continued, are there still altars consecrated to our cult there? I do not know, Monsieur Dutalon answered, whether the victims and holocausts of those remote centuries have been renovated after the hecatomb offered by the founder of the Italic school, Pythagoras, in Croton, noble population at the bottom of the Seine torrent in the Calabria, province of the Italian peninsula, in thanks giving for having found proposition 47 from book 1 of Euclid, with which he enriched the Maths.

259 Vast cave full of fire that in Ancient Times was believed to be at the centre of the Earth (*RAE*).

260 Also named Tobías Suvirnethon in the *Index* of Inquisition. The forbidden book is *An enquiry into the nature and place of hell* (1727).

And you, Materialist, said the President, facing him, have you been in the Chersonese of Yucatan and met or known by chance a Watcher of lunar movements there? I, Sir, answered the Materialist, have strolled through that whole country, and met a countless amount of observers of other people's lives; yet in regard to lunar movements, I have only heard about one Almana Kista,[261] that spends his time in those trifles, while he could employ it more usefully in forensic formalities such as: transferring parties in view of instructions, the writing of approvals, the accusation of rebellions, the issuing of judicial orders, etcetera, which is a science of notaries and is already in fashion, to which I could add the mild work of registering book indexes of consultations in Romance or in Latin as clear as the canon in mass, so as to be respected by the commoners in this way, seeing as there is no other. I also heard that Almana Kista keeps epistolary communication with the Bachelor Don Ambrosio de Echeverria, resident in the town of Mama. A man of solid judgement, very pragmatic in the delicacies of modern music and in the management of trigonometrical canon, of whom you can be informed about everything you wish to know. Having said that, the demons dragged him, following his defeat towards that ocean of fire.

Once the infernal troop was gone, Monsieur Dutalon asked, with a binding mood, to be given the instruction to roam all this hemisphere and its opposite, and witness the most excellent of what there was in the lunar orb. The President of the Athenaeum summarized the itinerary in a few words, telling him: Monsieur, we know by repeated observations, that the true diameter of the

261 Wordplay: "AlmanaKista" is the one who wrote the almanac, here reworked to be used as a proper name and as a profession, at the same time.

Moon in respect to the Earth bears a proportion of 33 to 121,[262] with the difference of a most minute fraction, and in regards to this it is important to divide the travel that you are going to do in three distances, following the vertical that traverses the southwest. The first distance is of 132 leagues, and ends in a silver mount which can be observed very well from Earth with the subsidy of the dioptric,[263] and can even be measured geometrically, since it arises over the equinoctial plane 296 *hexapèdes,* that results in 2066 feet of Castilla with short difference.

The second distance is the Country of the Deaf, and it ends in a magnificent bridge of a well-constructed structure called the *Pons asinorum*,[264] which number of arcs is such that subtracted from 188 and the same number of arcs subtracting 48, the remainder or rest are around 12 with 8=22.56—12VΩ, 8V—386. Having done the convenient analysis, you will have crossed the bridge, with the joy of knowing how many arcs the *Pons asinorum* has.

In the third distance, which most part is occupied by the Elysian Fields, really famous in gentle theology, a city where the Sheriff resides, is found with all its houses, streets, silver plazas, no more, no less, than the city described by Mayoli (about other´s faith) located near Bazzaim, sailing from Ormus to Etoa in Oriental India. The whole city cut and dug from a rock, with this, Monsieur, said the President, I think I have satisfied your desire. So that the square of the first distance 132 leagues, along with the two squares of the second and third distance expressed, add up to 1585584. As you well know Monsieur, the square of a number is the product of that number multiplied by itself.

262 The calculation is accurate, according to the *Treaty of Astronomy of Unsöld*, that is: .272.

263 The study of light refraction (*The Free Dictionary*).

264 This Latinism is a mathematic expression that corresponds to the square of the hypothenuse.

1st..... 132VΩ+2
2nd..... 17424.12+ V2Ω 1585584

Once deciphered this gibberish that I present to you, you will realize how many leagues the second distant has, how many the third one. Monsieur Dutalon entered his flying car heading towards the Southeast, and having said farewell, we remained in the Athenaeum until his return. Meanwhile, we indulged in the tasteful diversion of placing the city of Merida of Yucatan beneath the immobile meridian of a geographic globe that Monsieur Dutalon left here, and we found out that its northern latitude is 20 degrees 20 minutes, the same we had observed, as well as its situation in the middle of the third climate, whose maximum day must be 13 hours, 15 minutes. And since from here we see that the Earth rotates from west to east on its own axis, in proportion to the movement of the terrestrial equinox, it corresponds to this peninsula, according to its parallel**,** four Spanish leagues in a minute of time.

It is truly a continued miracle of the Omnipotence, that all its inhabitants are not thrown through those airs with a way more impetuous movement than the one given to the stone by the slingshot in the tangent of its circle. In this consideration, you must suffer a vertigo or permanent lightheadedness, that impedes the functions and reflections of a rational soul; resulting in a people with no hint of brain, giving into profanity, luxury; to banality, to idols, to perfidy, to treachery, to deep simulation, to sordid greed, to violent ambition, until shamelessly stepping over the sacred, a fastidious flattery unto abasement. A detestable slander to the highest degree of malice, a perpetual discord between tongue and heart, a more than brutal sensuality, which only ends with death; an inherent mendacity, volatility or inconsistency of temperament, and other

unworthy follies for a rational nature, that can fill more paper with blot, than the one led by a float to the Port of the Veracruz.

In attempt, we have created this panegyric, or call it also invective if you will, in retaliation to the jokes communicated to us by the Watcher in his letter on the 5th of the month of Epiphi, where he expresses that the few earthlings there that acknowledge our existence say yes: that we are people, but, which people? A people with no word, no shame, no brains, deceitful, erratic, lunatic. Look who is talking!

We have attempted to shape this panegyric, or invective otherwise, in retaliation to the mockery that the watcher communicates us in his letter of the 5th of the Month of Epiphi

Once back from his trip Monsieur Dutalon, in which he spent near four celestial months, he manifested to us the pleasure that filled him for having walked all our lunar orb. Monsieurs, he said, in the whole Universe there cannot be a more comfortable, enjoyable, nor delicious place to house the inhabitants that adore and praise the Creator. I wager that if anyone who deems absurd the opinion of placing Paradise on the Moon, from where the good Adam was banished for indulging a woman (I wish this easy condescendence had not been brought down later), had traversed all these regions, he would have certainly moderated his sentiment. What marvels and beauties of nature, that here are appraised ordinary, yet cannot be contemplated without astonishment and amazement! What sweet government, and adapted to the surroundings and temperance of the Anctítonas!

Certainly, there on our Earth globe, given its constitution, is need of distinction of class; where the fate of the rulers is the unhappiest one, for if the ruler reigns wrongly, everybody will he displease; should he rule rightly, few will like him, being very scarce the lovers of justice and equity. Anyhow, Monsieures, the time is

nigh for me to get on the globe from where I came from, and retire into my beloved floating island, in order to begin the work of which I spoke to you. I promise to give you a copy of it in another one of my voyages, that way you can add it to your archives or memoires.

The President of the Athenaeum begged Monsieur Dutalon to please go over the Yucatan Peninsula and place in the very hand of Bachelor Don Ambrosio de Echeverria, resident in the town of Mama, this writing that shall be well received for it is engraved in silver foils. And Monsieur Dutalon answered that everything he would execute in good will and added that in another trip he would meet with Bachelor Echeverria, from whom he will procure orders for the lunar globe, because we are left bound. And to me, the current secretary, the President of the Athenaeum ordered I attested everything said before and what was done and that I signed with my name, which I do today 7th of the month Dydimon of our year of the lunar fire 7914522.

Mister Bachelor
By command of the President of the Athenaeum
Remelttoin[265] Secretary

265 This is an anagram with a hidden name.

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Lunar syzygies and quadratures

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Lunar syzygies and quadratures adjusted to the Mérida of Yucatán meridian by an anctitona or denizen of the Moon, and sent to the Bachelor Don Ambrosio de Echeverría, tuner of funeral Kyrie in the Parish of Jesus of said city, and to the current professor of Logarithmic in the Town of Mama of the Yucatán Peninsula, in the year of the Lord 1775 is a text forbidden by Tribunal of the Holy Office of the Inquisition in Mexico. This is the English translation of the Booklet narrating the trip to the Moon. In an attempt to unveil the secrets of the manuscript to inscribe it in a history of trips to the Moon in literature, the essays hereby assembled traverse the landscapes of heresy and the avatars of prosecuted literature; Hermetic traditions and imaginary voyages; scientific discussions and fiction in science.

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