

Julius Schmidt, Rigas Ferraios, and the Greek Light

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Abstract

The life and work of the famous astronomer and geophysicist Johann Friedrich Julius Schmidt (1825 - 1884), as well as the life and work of the emblematic figure of the Hellenic figure of the Enlightenment, Rigas Ferraios (1757 - 1798), they are both strongly interconnected with the Hellenic Light, this light being understood both within the aspect of its physical existence, as well as in its metaphorical, that is symbolic, or spiritual, use. This symbolic existence strongly refers to the light of the Ionian Enlightenment, and the Presocratic giants that gave birth to Philosophy and the Science of Astronomy. It also refers to the spiritual light of their ancestors, the great Personalities of the Age of Enlightenment, among which Rigas Ferraios, as a Hellenic figure of the Enlightenment, belongs, and dominates with its personality and supreme work, inspiring the dreams of all the Balkan nations. Rigas Ferraios is the great Enlightener, and creates his own vision for History and Politics, under the light of Reason and the value system of the Polis and the Alexandrian epoch. The visual dimension of his work are the maps he compiled, especially his famous Charta. Julius Schmidt, on the other hand, sheds Light on the scientific history and the visible physical characteristics of our satellite, the Moon, as studied within the Newtonian Paradigm, one of the pillars of the Age of Enlightenment.

Keywords: Julius Schmidt, Rigas Ferraios, Enlightenment, Chartography, Selenography, the Production of Spaces.

1. The Maps of Rigas Ferraios and Julius Schmidt.

Julius Schmidt belongs to this deep intellectual river of thought, science and astronomical methodology and observation, and especially to the Science of Astronomy, which can be regarded as a Science, whose meth-

odology and instrumentation strongly depends upon the study of light. He conducts all his night observations under the same light of the sky the Hellenic giants of Science also lived and worked, and under the spiritual light of the Age of Enlightenment, that shaped and transformed completely the Science of Astronomy, its theoretical foundation, its aims and instrumentation. Julius Schmidt uses the telescope, a considerably major technological evolution of the realm of Astronomy and the Natural Sciences, an offspring of the spirit of the quantitative and empirical vision towards Nature, in order to produce one of the most prominent selenographic maps ever conceived, mapping the surface and the physical features of the Moon with patience and scientific passion. The newly born Greek state of his age surely evoked the thread of symbolisms connecting the land, and its nation, with his spiritual ancestors, the ancient Greek great personalities, and the culture they created and lived within, while the clear Attica sky was one of the most suitable places for astronomical night observation during the times Schmidt lived [1], [2].

Rigas Ferraios is one of the most prominent intellectuals of the European Enlightenment, and totally dedicated to the spiritual and political liberation of the Hellenes, and all other nations of the Balkans, spreading the very same spiritual light of his Ionian ancestors. Rigas Ferraios belongs to a historical epoch, where the Greek shipping trade has already grown, thus providing economical development and the introduction of the European world of ideas, including the physical and the material aspects of this interaction, through the nautical life characteristics, as well as the sailing into the world of the ideas of the European Enlightenment, the immediate successor of the Hellenic Light . This light refers to the political ideals concerning Democracy, the Civic Rights of the citizens, the formation and structure of a society that embraces all the Balkan populations, regarded as a political entity or union of nations totally equal to each other, that is to the birth of a Pan – Balkan state, according to the doctrines of Reason and Equality, as well as the Paideia which is strongly based on the popularization of the scientific Spirit, as means of the inner liberation of each individual, a most crucial factor for the upcoming Resurrection of the Hellenic nation, as well as for all other Balkan nations [3], [4]. He is one of the creators of the Greek En-Ligthenment, a person that conveys the Light of Freedom and Paideia [5].

Both Rigas Ferraios and Julius Schmidt live and work under the East Mediterranean light, a crucial physical component of its climate.

Julius Schmidt is nominated as the Director of the Athens Observatory, in December 4, 1858. Sina's family donation falls in the decisive hands of the great Astronomer, and Schmidt undertakes the repairing and maintenance of the instruments of the Observatory, while at the same time enriching the library with a plethora of scientific books and journals. He also establishes the edition of the Publications of the Observatory of Athens. In the Observatory of Athens Schmidt spends the rest of his life, achieving the final production of his masterpiece, the Topographical Chart of the Moon, “Chapitre der Gebirge des Mondes”, regarded to be one of the most accurate selenographic maps ever produced by means of eye observation. His area, having

ΣΥΝΕΔΡΙΟ

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- η Ελληνική Σκέψη στην Αυτοθέσμιση των Κοινωνιών, τον Διαφωτισμό και την Γνώση

ΑΞΙΟΝΑΣ ΙΙ: Η ΕΛΛΗΝΙΚΗ ΣΚΕΨΗ ΣΤΟΝ ΔΙΑΦΩΤΙΣΜΟ, ΤΑ ΚΙΝΗΜΑΤΑ, ΤΟΝ ΚΟΣΜΟ ΤΩΝ ΙΔΕΩΝ ΚΑΙ ΤΗΝ ΓΝΩΣΗ

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the diameter of two meters, encompasses the drawing of the visible face of the Moon, observed with a 158mm refractor Ploessl telescope. This map is based on 2.731 drawings, records about 32.856 craters, and also catalogues 348 riles on the surface of the Moon. This masterpiece of observational astronomy, and Selenography in particular, consists of 25 parts, and can be seen in the old building of the Athens Observatory, on the hill of Nymphs, at the Thiseio area, in Athens. His Topographical Chart of the Moon is considered to be the most precise and accurate of his age, and compared to the charts produced up to the era of space exploration, and the Apollo Mission [6].

Rigas, inspired by the intellectual light of the Hellenic intellectuals, and always referring to Democracy, the Self – Institution of the Societies, and the propagation of Paideia and the Scientific Spirit, composes three major maps, the “Charta of Greece”, the “New Charta of Wallachia” and the “General Charta of Moldavia”. His “Charta of Greece” is the most famous among these, and can be regarded as one of his most important contributions to the European culture of his times. The Charta of Rigas is an excellent map of the Eastern Mediterranean and the Balkans, characterized by outmost accuracy. Rigas publishes his famous map at the year 1797, in Vienna. Rigas Ferraios, among his other enthusiastic activities, and during his stay in Vienna, prints also pamphlets based on the principles of the French Revolution. These include the Declaration of the Rights of Man and of the Citizen and a New Political Constitution of the Inhabitants of Rumeli, Asia Minor, the Islands of the Aegean, and the principalities of Moldavia and Wallachia [7], [8], [9]. His work can be considered as a major transmittance and spreading of the core of the European Enlightenment within the territory of the oppressive Ottoman Empire. Rigas produces thus a masterpiece of Chartography, and his “Charta” becomes the basis for maps depicting the same geographical territory that followed its publication, while it evokes and gives birth to the Philhellenic movement that shall spread all across Europe, and plays a crucial role for the political development of the Greek state, from the begin of the Greek Revolution, and up to the formation of the new Greek State, under the leadership of one of the Giants of European Politics, Ioannis Capodistrias.

2. Rigas Ferraios, Julius Schmidt, and the Hellenic Notion of Light

Rigas and Schmidt, they both produce excellent maps, with Julius Schmidt composing his famous Topographical Chart of the Moon, known as “Chaptre der Gebirge des Mondes”, and Rigas Ferraios composing, among his other maps, his famous “Charta”, a geographical map including the Eastern Mediterranean and the Balkans. Both of these maps are most detailed and accurate, and stand as a prototype for the forthcoming generations of the relevant selenographers and chartographers.

The selenographic work of Julius Schmidt belongs to the realm of scientific reasoning, and especially Astronomy, while the Charta of Rigas Ferraios belongs to the political and philosophical doctrines of the Age of Enlightenment, and of the Hellenic Alexandrian Oecumenic spirit. Within Rigas' Charta, the map projection of the Eastern Mediterranean and the Balkans becomes a symbol of national identity, of the ideals of the French Revolution, and of the movements of Neoclassicism and Romanticism, of the language and the culture that convey them, as well as for the Oecumenic Spirit of a Pan – Balkan uprising against the Ottoman oppression. Rigas' "Charta" is a vehicle for the revolutionary Ideals of the Space of discourse of the European Enlightenment, while Schmidt's selenographic map is the vehicle for the scientific Spirit, as it is embodied within the realm of Astronomy.

Picture, that is light, through its use and function, becomes the basic mean for conveying the relevant Information, both for Rigas and its Charta, as well as for Schmidt and its Selenographic Map. This relevant Information can only be fully understood under a certain philosophic, scientific and political perspective, according to the specific details of Rigas' and Schmidt's life and work. Selenography meets Chartography, within their symbolic extent, and their function, through their use for concrete purposes. They both are aiming to illuminate, the scientific community, as it happens for Julius Schmidt, or the nations of the Balkan area and Eastern Mediterranean, according to Rigas' dream and vision.

Rigas Ferraios and Julius Schmidt, they both produce their own "Spaces of Discourse", created by the physical or allegoric Hellenic Light. The conception of this space might refer to space as a physical object, that is a geographic map of a territory, or a selenographic map, that is a map of the geographical features of the Moon, or a space belonging to the intellectual Noosphere, that is either to the realm of Science, and Astronomy in particular, or to the Realm of Enlightenment, and its corpus of ideals, ideas and spiritual references. The maps become symbols of the aim oriented activities of these two important personalities, and are an indispensable part of the core of their lives.

The Hellenic Light manifests itself within the astronomical Paradigm, within whose borders Julius Schmidt creates his own work, and within the philosophical, humanistic and democratic value system of the Paradigm of the Enlightenment, within whose borders Rigas Ferraios creates his own account of History, and especially the direct interconnection of the History of a past which is lost, the Alexandrian past, and now revives as a special political and philosophical movement, in the age the Charta is born.

The Science of Astronomy is born under the Ionian Light. This Ionian spirit not only founded the activities we know in our days, collected under the title of "Science", but they also established all the ideals and the practical implementation of the Political systems of Polis and Democracy, Dialectics and Reason, which guided the life and work of the European figures of the Age of Enlightenment, and their Hellenic counterpart, Rigas Ferraios [10].

This age continues with the second period of its acme, within the Alexandrian Period, with the introduction of advanced mathematical methods, namely and mostly Geometrical Methods, which envisage the act of Seeing and Demonstrating, and achieving, within the framework of Dialogue, valid and sound argumentation for the creation of exact and accurate logical structures, that is mathematical theories or specific scientific branches. Within this intellectual atmosphere, the “Mathematical Syntaxis” (“Almagest”) of Claudius Ptolemy and the “Elements” of Euclid appear, founded upon axioms that are regarded as a part of the common experience, exposed under the light, so that they can easily be demonstrated and “shown”, being both testable and self-evident [11]. The Neoplatonic Philosophy, which also flourishes during the Hellenistic epoch, and becomes a dominant part of its culture, as well as a fountain of ideas for the great civilizations to follow, the Byzantine, the Islamic and Arabic, and the European civilization, attributes to the study of Light a very central and precise meaning.

Astronomy, as an exact Science experiences his second phase of flourishing in the age of Johannes Kepler and Galileo Galilei, and in the forthcoming groundbreaking work of Isaac Newton, who establishes the new-born science of Mechanics, or the Natural Philosophy, thus creating a new and fundamental branch of science. Julius Schmidt belongs to this tradition. At the age of Kepler and Galileo a novel instrument for astronomical observations, the telescope, is introduced. The naked eye and its observational limits get magnified by the function of the telescope, which directly refers to the manipulation of the physical light.

Schmidt succeeds to map the visible side of the Moon, thus producing an excellent map of its surface, after myriads of passionately night observations under the clear Attica sky, one of the best places and climates in Europe suitable for astronomical observations. He uses for his observations a 158mm refractor Ploessl telescope, a device that consists of a combination of lenses, permitting to its user a wider and cleaner view of the harmonious dances of the various celestial phenomena [12]. This mechanical device, the telescope, is based on the scientific branch of Optics, a scientific discipline studied heavily and exhaustively by all great Hellenistic scientists and polymaths, as well as the Arab and Islamic giants of Astronomy that followed the great Alexandrian tradition.

Under the same skies, the Presocratics, as well as the scholars and polymaths of Alexandria have lived, and conquered the celestial phenomena with their philosophic inclination and their rigorous treatment of the dance of the celestial bodies according to the establishment and the methodology of the Science of Astronomy. It is not an exaggeration to state that this physical light of the atmosphere of the Eastern Mediterranean, together with its peculiar geographical structure, contributed greatly to the formation of a certain character and attitude towards Nature, Cosmos, and the place of Man within it [13].

Both the giants of the Ionian Enlightenment, and of the Alexandrian epoch, as well as their counterparts of the European Enlightenment and its Hellenic counterpart, have shown a rich seed, waiting only for the hour

when the overall civilizations, and Greece in particular, as it is the case with Rigas Ferraios, would leap their glorious fruits [14], [15], [16], [17], [18].

By studying the work of Rigas Ferraios and of Julius Schmidt, we can speak about the awakening of a civilization, the European civilization during the Age of Renaissance and the Age of Enlightenment, or about the awakening of the Hellenic nation. By this, we mean the strongly interconnected network of notions and ideas, that gave birth to Philosophy and the Science of Astronomy, which continued to their Alexandrian splendor of the Hellenistic era, returned to Europe, as a gift from the Byzantine and Arabic and Islamic civilization, and finally transformed itself to the rigorous Mechanistic notion of Cosmos, and the Clockwork Universe, also serving as a basis for the political and social ideals of the Hellenic Polis and the Freedom of the Nations [19], [20].

3. Rigas Ferraios, Julius Schmidt, and the Production of Spaces.

Rigas Ferraios and Julius Schmidt produce their maps, that is their Spaces, according to their dreams and ideals. The production of these Spaces involves the element of Light as a crucial factor, and their maps can be regarded, among other, as the symbolic expression of this Light, which creates the observable evidence of their manifestation, to which the cartographic work of Rigas, and the selenographic work of Schmidt, belong. These two great personalities give to their life and the work the required visual dimension, which also embraces it, and attributes to it the splendor of perfection.

The Light of the novel ideals of the Age of Enlightenment produces its own Space of Discourse, consisting of the life and work of intellectuals all across Europe, begins as a river, while its fertile delta gives birth to all social spheres of cultural production, such as Philosophy, Art, Science, and the ideals of new Political Systems [21]. Rigas Ferraios includes all of these, especially the French part of intellectual contribution to the Movement of Enlightenment, and furthermore bases his work on the historical and symbolic extension of the intellectual presence of the Ancient Hellenic Culture. By this ingenious move, he inspires not only a Pan-Hellenic revolution, but his vision encompasses a Pan – Balkan State, which shall result from, and function by, the ideals of the Enlightenment and of the French Revolution. All these aspects, with their accompanying symbolisms, metaphors and analogies can be readily seen and read on the cartographic work of this great personality of the Hellenic Enlightenment, while they are placed with careful intention, chosen in order to refer to ideals of the past that can envisage the course of life of the present. The relevant geographic Space of Discourse is accompanied with another Space of Discourse, in a stratographic order, that serves for the enlightenment of the personalities that both read the map and comprehend Rigas' vision. Rigas uses as the pro-

totypes of his famous “Charta” the geographical area of the great Hellenic city – states and Eastern Mediterranean Hellenistic kingdoms, enriching his map with numerous symbolisms, and visualizing by this very map his philosophical and political ideas. The territories depicted in the map belong to a virtual “inner space” of his network of ideas and ideals, and promotes the ideal of freedom for all Balkan nations under the Light of another most important figure of Hellenism, Alexander the Great. Rigas creates the visible scientific, that is geographical, counterpart of his vision of Oecumene, and places it firmly within the wide realm of the European Enlightenment [22], [23], [24].

The Light of the Sciences, and in particular of Astronomy, which can be regarded as one of the first scientific branches that appeared within the Hellenic civilization, also produces his own Space of Discourse. Within this spirit, Julius Schmidt produces his own work, crowned by the compilation of his masterpiece, the Selenographic map. It is about “bringing into light” with a detailed recorded way, all the visible features of the Moon, which stops of being a mysterious Deity in the celestial sphere, and is regarded as another astronomical object of the Solar system, conceived within the framework of the Newtonian cosmological Paradigm. This new European Light, and the accompanying Mechanistic Paradigm introduces the trademark of the multi-faced Space of the Age of Enlightenment [25], [26]. Also, the newly founded Greek state, in which Julius Schmidt lives and works, as a most prominent and distinguished scientist and person, conveys within its spiritual atmosphere the utopian revival of the Hellenic Light, according to the movement of Neoclassicism, a fact that becomes also evident from the very building of the old Athens Observatory, where Schmidt lived and conducted his research, a minute and most beautiful neoclassic palace.

Rigas uses as a base of his map compilation the map of Ancient Greece of Delisle, while there is compelling evidence that he used extensively the French Encyclopaedia of Diderot and D’ Alembert for retrieving information about the Ancient Greek History of places and their name. His “Charta” belongs to the revival of the ancient Hellenic Spirit, and the rise of Philhellenism across all over Europe, which serves also as an important and crucial ingredient of the Neoclassical and Romantic movement [27]. Rigas’ “Charta” can be conceived as the immaterial presence of these ideals, which, among other, find their realization with the tragic death of a giant of Poetry and exuberant Philhellene, Lord Byron [28].

The Space Rigas creates with his maps, and especially his “Charta”, is in reality the creation of a national identity, within the realm of the geographical definition of a Pan – Balkan territorial project. The notion of the “Hellene” is defined within Rigas’ work and thought as the adoption of the Greek language and culture, “a sort of emancipation, both social and personal, from Ottoman despotism”. Also, following the ideals of Freedom of Culture and freedom of Speech, he proposes that the Greek language should be the official language of the state that he envisaged, but he did not suggest that the other languages of the Balkan nations and populations should be abolished [29].

Schmidt correctly observes catalogues and even discovers the most detailed features of the lunar topography, including sites such as lunar mountains, craters, seas, oceans and bays. The features of the surface of the Moon become illuminated, they do not convey any secrets, and the Moon is regarded as a physical object, as a celestial body, with all of his characteristics being well defined, and studied according to the doctrines of Celestial Mechanics. The Moon, according to the spirit of the great Astronomers and Selenographers, does not belong to the realm of Mythos, of the superstitions and the fears, but is an object under strictly defined scientific investigation, whose properties have to be recorded accurately and systematically, something that refers to the first, the fundamental stage of scientific investigation. The field of Selenography makes enormous strides through the lifelong effort of Julius Schmidt [30].

4. Concluding remarks

Each part of this Hellenic Light, either the scientific, or the philosophical and political, creates his own Space, and then, in turn, this Space, with all its Dialectics, controversies and contradictions, sheds his Light onto the World. Among the greatest achievements of the Hellenic light, and the Alexandrian age in particular, is, not only the Pharos of Alexandria, a source of visual, physical light, but most importantly, the noospheric Pharos of Alexandria, namely the Library of Alexandria, which together with its Museum, served as a fountain of spiritual light and scientific research for many centuries, and became the prototype of the civilizations that followed [31]. The history of the Library [32], [33] sheds light into the achievements and the ideals of a civilization, that produced autopoietic social and intellectual structures, which traveled through history, and seeded the European Renaissance and the Age of Enlightenment. These two cartographic achievements are, at the same time, two physical objects with a concrete meaning of their function, and two symbolic entities, that refer to their “existence within a place of phantasy”, to Rigas’ vision of a free, democratic, Alexandrian Pan – Balkan state, or, by Julius Schmidt, to the accurate description of a celestial body, namely our satellite, the Moon. Only within this framework the masterpieces of Julius Schmidt and Rigas Ferraios acquire their full meaning and significance.

We have to stress the fact that these Spaces, either of the Age of Enlightenment or of the science of Astronomy, are not homogeneous, but rather a collection of different tendencies from various individuals, that is scholars, polymaths and scientists, but they are of compact nature, since all of these tendencies share a common ground of intellectual reference and share the same World – view.

The political value system of Rigas strongly refers to the Oecumenic spirit of the Alexandrian Hellenic civilization, while his Charta belongs to the cartographic spirit of the Enlightenment, conveys the ideals of that

ΣΥΝΕΔΡΙΟ

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ΑΞΙΟΝΑΣ II: Η ΕΛΛΗΝΙΚΗ ΣΚΕΨΗ ΣΤΟΝ ΔΙΑΦΩΤΙΣΜΟ, ΤΑ ΚΙΝΗΜΑΤΑ, ΤΟΝ ΚΟΣΜΟ ΤΩΝ ΙΔΕΩΝ ΚΑΙ ΤΗΝ ΓΝΩΣΗ

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age, and serves as a vehicle for its own vision. This vision includes strongly as a crucial factor, not only the political intellectual tradition of the Alexandrian and Classical age of the Hellenic light, but also the scientific achievements of that age, which returned again to the space of its origin, and through the life and work of scholars and polymaths, from their exile into Western Europe up to the European Age of Enlightenment [34], [35]. Rigas, in his work, transfers this complete Noosphere within his work [36]. So does, in his own way, Julius Schmidt.

We can finally conclude, within our limited investigation, with an excerpt from one of the short essays of Odysseus Elytis, describing the famous poet's and Nobel Prize Laureate in 1979 intentions: "I consider poetry a source of innocence full of revolutionary forces. It is my mission to direct these forces against a world my conscience cannot accept, precisely so as to bring that world through continual metamorphoses more in harmony with my dreams. I am referring here to a contemporary kind of magic whose mechanism leads to the discovery of our true reality. It is for this reason that I believe to the point of idealism, that I am moving in a direction which has never been attempted until now. In the hope of obtaining a freedom from all constraints, and the justice which could be identified with absolute light...". To this specific Light, and to the Spaces it belongs, the whole life of Rigas, as an intellect, and the whole life of Schmidt, as a scientist, was absolutely dedicated. This Light builds the canvas of their lives, where their work is interwoven, this Light in its very aspects, the physical and the metaphorical ones, is the common thread that connects them with Hellas, as a state and as an idea, as intellectuals, scientists, political figures, but also as human beings. Their maps, conceived under the same Light, constitute the intellectual coup de grace for the investigation of Nature, if we refer to Julius Schmidt, and to the preparation of the Revolution to come, for the case of Rigas Ferraios.

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