

ETYMOLOGICAL AND SEMANTIC ANALYSIS OF ASTRONOMICAL  
ONOMASTICS IN AL-BIRUNI'S INTERPRETATION

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**Abstract.** This article provides an etymological and semantic analysis of planetary names presented in the works of Abu Rayhan al-Biruni.

**Keywords:** onomastics, cosmonym, astronomical concept, planetary name, Sun, Moon, Avesta, Zoroastrianism.

**Introduction.** In modern linguistics, onomastics—particularly cosmonyms—is analyzed as a significant linguistic domain that reflects a people's historical memory, religious beliefs, and cultural worldview. "A cosmonym (from Greek kosmos 'universe, cosmos' + onoma 'proper name') denotes the proper names of celestial objects located in outer space (cosmic space, galaxies, stars, planets, and natural objects on their surfaces). It constitutes one of the types of proper names [7, 41]". Cosmonyms often originate from ancient mythological figures, divine symbols, natural phenomena, and symbolic signs; their semantic layers embody a given people's conceptions of the structure of the universe. Therefore, the study of onomastic units—especially cosmonyms—found in written monuments serves as an essential source for reconstructing historical perceptions of time and space.

In world linguistics, cosmonyms have been investigated by a number of scholars, including V. N. Toporov, B. A. Uspensky, A. V. Superanskaya, V. A. Nikonov, Y. Nemet, and M. N. Bogolyubov. Their studies analyze the etymology, semantic characteristics, and stylistic aspects of certain cosmonyms. In Uzbek linguistics, the names of celestial bodies have been examined in the scholarly works of H. Dadaboyev, Sh. Bobojonov, Q. Karimov, A. Rustamov, R. Doniyorov, and A. Primov. These studies primarily address the linguistic features of cosmonyms used in literary texts and provide information on the formation of Uzbek cosmonymy.

**Methodology.** The study of planetary names of various peoples as recorded in the written sources of Abu Rayhan al-Biruni makes it possible to reveal how a given people's cultural and spiritual values are reflected in linguistic units and to identify features of ancient onomastic thinking. In analyzing planetary names, the article employs descriptive, classificatory, and comparative-historical methods and techniques. "The primary function of the descriptive method is that, in the process of describing and characterizing linguistic units and phenomena within a specific synchronic aspect, it consistently analyzes them, determines their function, position, usage, structure, and distinctive features in the language, and then generalizes the findings and draws conclusions [1, 257]".

**Discussion and Results.** The lexical composition of our written monuments is exceptionally rich in proper names. Although certain categories of proper names—such as personal names, place names, and tribal or clan names—have been addressed to some extent in scholarly literature, some onomastic units, particularly planetary names, have not yet been subjected to sufficiently specialized analysis. However, in such works by Abu Rayhan al-Biruni as "Monuments of Past Generations", "India", "al-Tafhim", and "al-Qanun al-Mas'udi",

planetary names and their naming variants among different peoples are extensively presented, which underscores the necessity of examining these names from an onomastic perspective. The naming of celestial bodies is intrinsically linked to the customs, worldview, language, spiritual life, way of living, and moral and social thinking of the people who name them, and this process ensures the manifestation of these factors in linguistic units. In “Monuments of Past Generations”, Abu Rayhan al-Biruni systematically explains the naming of planets among various peoples and comparatively presents the Arabic, Persian, Greek (Byzantine), Syriac, Hebrew, Indian, and Khwarazmian variants of the names of the seven luminaries. In some cultures, the names of the days of the week are derived from the names of the seven most prominent planets. Concerning this, al-Biruni writes in “India”: “Our astronomers call the planets ‘the lords of the days of the week.’ The hours of the day are also designated by the names of the planets [5, 167]”. Research indicates that Sunday is referred to as Shams (Sun), Monday as Qamar (Moon), Tuesday as Mirrikh (Mars), Wednesday as Utarid (Mercury), Thursday as Mushtari (Jupiter), Friday as Zuhra (Venus), and Saturday as Zuhul (Saturn). Since Abu Rayhan al-Biruni composed his works in Arabic, the majority of the cosmonyms he employed belong to the Arabic language.

**Ash-Shams (the Sun).** As one of the most significant celestial bodies, the Sun has been designated by different names across cultures, and these names are closely connected with the worldview, religious beliefs, and cultural traditions of the peoples who coined them. In Arabic, the Sun is called ash-Shams (الشمس), a term expressing the meanings “to illuminate” and “to shine.” In Persian, the Sun is referred to by the names Mehr and Khurshid. In the “Avesta”, the word Mitra, which denotes the Sun, is identified as the name of the god of light and radiance; in Pahlavi, it appears in the form Mehr. The name Khurshid is also associated with the Avestan deity Hvarixshanta, meaning “the radiant Sun.” In general, the “Avesta” assigns a significant role to the perception of stars and planets as divine entities. “The text consists of twenty-one yashts, several of which are hymns dedicated to celestial bodies: “Moh Yasht” is devoted to the Moon; “Khurshid Yasht” and “Mehr Yasht” to the Sun; “Tir Yasht” to the star Sirius; and “Vanant Yasht” to the star Antares. These celestial bodies are venerated and worshipped [8, 62]”. In al-Biruni’s “al-Tafhim”, the Sun is described as possessing inherently high heat and dryness, and as being associated with a sharp and pleasant taste, as well as the colors red and yellow. In Yusuf Khas Hajib’s “Qutadghu Bilig”, the name of the Sun appears in the form *Yashiq*. The analysis shows that the Arabic cosmonym ash-Shams primarily reflects the physical characteristics of the Sun—light and radiance—whereas the Persian name Mehr conveys not only its natural but also its religious and mythological dimensions. This demonstrates that religious conceptions play a crucial role in the formation of planetary names.

**Qamar (the Moon).** As one of the celestial bodies, the Moon is designated by distinctive names in the languages and cultures of various peoples. In Arabic, the Moon is denoted by the cosmonym Qamar (القمر). In Persian, the name of the Moon derives from the Middle Persian form *māh* and is used as *Māh/Moh*. In Persian, the word moh not only refers to the celestial body but also denotes the unit of time “month.” Moreover, in literary discourse, the concept of moh is employed as a symbol of beauty, delicacy, and perfection. In al-Biruni’s works, the Moon is characterized as having a moderately cold and moist nature and is associated with a salty and sour taste, as well as the colors blue and white. In “Qutadghu Bilig”, the name of the Moon appears in the form *Yalchig*.

**Mirrikh (Mars).** In ancient astronomical traditions, the planet Mars occupies a distinctive position due to its color, motion, and symbolic significance, and its naming has developed with particular features across different cultures. In Arabic, this planet is referred to by the cosmonym Mirrikh (المريخ). The term mirrikh is an Arabic word meaning “copper” [12, 786]. In Persian, the planet is associated with the name Bahram. In the Avesta, Bahram appears in Pahlavi as *Varaxran*, a deity of justice, victory, and glory. “The war god Mars in ancient Greek mythology and Bahram in the ‘Avesta’ denote the same planet, and such naming is based

on the characteristics of this planet [8, 65]”. In “al-Tafhim”, al-Biruni describes Mars as a celestial body with a hot and dry nature, attributing to it the color red, a pungent odor, and a bitter taste. In Qutadghu Bilig, the planet is referred to as *Ko‘rud* and is explained as “it moves arrogantly; wherever it turns, it dries up flourishing things[13]”.

**Utarid (Mercury).** The planet closest to the Sun is Utarid (عطارد), which also appears in Arabic in the variant Atorid. In Persian, the planet is associated with the name Tir. In the Avesta, *Tishtriya* is venerated as the deity of celestial waters. “The cosmonym Tishtriya occurs in later sources in the forms Tishtar, Tishtr, Tishrin, and Tir. In contemporary scholarly literature, this star is referred to by its Latin name Sirius, while among the people it is known as the Tir star [8, 63]”. Al-Biruni characterizes Utarid as a celestial body with moderately cold and dry qualities, attributing to it blue and black colors and a complex taste and odor. In Yusuf Khas Hajib’s work, the planet appears under the name *Orzu* and is described as bringing the fulfillment of wishes to those it approaches.

**Mushtari (Jupiter).** In ancient astronomical conceptions, this planet was regarded as one of the largest celestial bodies with the widest sphere of influence. In Arabic, the planet is designated by the cosmonym Mushtari (المشتري). In Persian, Jupiter is known as *Hurmuzd*, a cosmonym associated with the supreme deity of Zoroastrianism, Ahura Mazda. In the “Avesta”, Ahura Mazda is exalted as the god of goodness, justice, and wisdom. In “al-Tafhim” this planet is described as having a moderately warm and moist nature. Along with a sweet and pleasant taste, the colors yellow and brown are attributed to it. In Qutadghu Bilig, the planet is referred to by the name *O‘ngoy*.

**Zuhra (Venus).** In Arabic sources, this planet is referred to as Zuhra (زهرة), derived from the Arabic *zuhara*, meaning “bright” or “radiant.” In Persian, the planet is known as *Nohid*, a name associated with Ardivisura Anahita, the deity of water, fertility, and beauty in Zoroastrian doctrine. “In the “Avesta”, this word is used as an epithet of a female angel who is the guardian of waters, and its abbreviated form is Nohid. Subsequently, this name came to be applied to the star symbolizing beauty. Nohid corresponds to the European goddess Venus [11, 92]”. In classifying the properties of planets, al-Biruni attributes to Zuhra a moderately cold and moist nature, noting its pleasant taste and the characteristic white and bluish colors. In “Qutadghu Bilig”, the planet appears under the name *Sevit* and is described as a source of tranquility for souls when it reveals its beautiful face.

**Zuhal (Saturn).** “Zuhal is the name of the planet Saturn, which, according to ancient astronomers, occupied the seventh sphere; it is derived from the Arabic verb zahala, meaning ‘to move away’ or ‘to leave a place [10, 337]”. In Persian, the planet is called *Kayvon*. Studies indicate that this word originates from the Pahlavi forms *Kaywān/Kayvān* and conveys the meanings “height” and “distance.” The term kayvoni, encountered in Eastern literature, may semantically be connected with the Persian planetary name Kayvon. In al-Biruni’s sources, this planet is characterized by a cold and dry nature and is described as grave, farsighted, and associated with black and yellowish colors. In Yusuf Khas Hajib’s works, the planet is referred to by the name *Sekantir*.

**Conclusion.** In conclusion, it can be stated that the planetary names presented in the works of Abu Rayhan al-Biruni and in Eastern written sources reflect not only astronomical concepts but also the religious beliefs, mythological perceptions, and cultural thinking of particular peoples. Thus, in al-Biruni’s legacy, planetary names function as cosmonymic units that go beyond mere designation and emerge as onomastic units encompassing rich etymological and semantic content.

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