

NATURAL (UNIVERSE) PHENOMENA IN THE WORKS OF NIZAMI GANJAVI

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Nizami Ganjavi lived and created in a great period: Great Eldeniz Rulers of the Atabeg state of Azerbaijan: Shamsaddin Eldeniz (1136-1175, capital Nakhchivan), Mohammad Jahan Pahlavan (1175-1186, capital Hamadan), Qizil Arslan (1186-1191, Tabriz), Nusrataddin Abu Bakr (1191-1210), Muzaffarddin Uzbek (1210-1225). He lived in the time of rulers who frightened their enemies, did great things in state-building, and played a role in the development of culture and literature. The poet was not afraid to write down his thoughts with all his responsibilities, and he inherited his thoughts and ideas about natural phenomena and the universe in a very pleasant way.

The 12th century was called the golden age of Azerbaijani history. The brightest pearl of the crown of this golden age is Sheikh Nizami Ganjavi (real name Ilyas ibn Yusuf). Each of Nizami Ganjavi's poems is a perfect and unique example of art. Isa Habibbayli beautifully praises the works of Nizami Ganjavi, his genius: "Treasure of Mysteries" - a treasure trove of rich poetry and wisdom, "Khosrov and Shirin" - an instructive epic of love, "Leyli and Majnun" - a genius written long before "Romeo and Juliet" romantic love adventure, "Seven beauties" - the world of private art and spirituality, "Iskendername" is a great monument of art, like the Platonic Academy of Azerbaijani literature, "Iqbalname" is Aristotle's "Rhetoric", and "Sharafname" is "Poetics"..

(Vice-President of the Azerbaijan National Academy of Sciences, academician, MP, <http://science.gov.az/news/open/16796>, "Azerbaijan" newspaper April 29, 2021, world of beauty of Azerbaijani literature) Although nearly a thousand years have passed, the brilliance of this pearl has not diminished in the slightest. Why? Ganjavi himself expressed this very well:

İnci tək sözlər seç, az danış, az din. Qoy az sözlərlə dünya bəzənsin.
Az sözün inci tək mənası solmaz, çox sözün kərpic tək qiyməti olmaz.
The poet, who highly values science, education and knowledge, says:

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Qüvvət elmdədir, başqa cür heç kəs. Heç kəsə üstünlük eyləyə bilməz!
Hər uca zirvədən biliniz fəqət. Alimin rütbəsi ucadır əlbət.

Nizami Ganjavi was a great scientist, naturalist, astronomer of his time, encyclopedic heir of previous knowledge:

Dünyada nə qədər kitab var belə.
Çalışıb əlləşib gətirdim ələ.
Oxudum, oxudum sonra da vardım.
Hər gizli xəznədən bir dürr çıxardım.

One of the main advantages of Eastern scholars, thinkers, poets and writers is their ability to present words, to express their thoughts in beautiful words, in a way that evokes harmony in an understandable way. These works, which were presented to the kings and rulers, were to be presented in a delicate and fluent manner, without compromising the scientificity, the meaningful interpretation of events, the rule of words, and at the same time the status of the future. This work required great skill and skill. To do this, the writer had to have a comprehensive knowledge, to get acquainted with all the previous knowledge system, to know their pros and cons, to be able to draw conclusions and to present these results in an artistic way.

The great Nizami was closely interested in astronomy, the oldest of the exact sciences. This was due to the fact that in ancient times, peoples, especially those engaged in agriculture and animal husbandry, considered it important to determine in advance the exact time of the change of seasons. For the Egyptians, for example, the first appearance of the star Sirius in the new year was very important. Thus, by observing this star, it determines the length of the solar year, and the timing of the flooding of the Nile River, which is a decisive factor in the country's economy, was determined in advance. The development of astronomy was a

Ptolemy's system, the Sun and the Moon were also considered planets, so the number of planets was 7 at that time. Nizami Ganjavi commented on this:

Yeddi qat içində nə var binadan. Min alqış ona ki, Odur yaradan.

Bu fikir "Şərəfnamə"də keçir: Yeddi firuzəli bu qəsrdə sən,
Haqqa, ədalətə vüsət vermişən.

One of the most interesting parts of Iskendername is "Alexander's secret affair with seven Greek philosophers." These philosophers are: Aristotle (Aristotle), Valis (Fales), Belinas, Socrates, Farfuruyus (Porphyry, Syrian, real name Malik, educated in Greek, wrote in Greek), Eflatun (Plato) and Hormus (an imaginary man who invented all sciences). Collecting the views of the seven philosophers, Nizami says Aristotle's first words in Alexander's debate with scientists about the imaginations of the planets and the creation of the universe. According to Aristotle, there was first a movement, and speed divides it into two parts:

Əvvəl vardı ancaq tək bir hərəkət, Onu iki yerə ayırdı sürət,
Bu iki hərəkət gəlib bir yerə, Yeni bir hərəkət doğurdu hərə.

Əvvəlki hərəkət ayrıldı yenə, Bu üçü qoşuldu biri-birinə.

Üç xətt zahir oldu üç hərəkətdən, Üç dövrə yarandı ondakı xətdən.

Mərkəzdən ayrıldı həmin dövrlər, Yaranıb ortaya çıxdı bir cövher.

Cövher keşməkeşdən doğub parladı, "Hərəkət eyləyən cisim" oldu adı.

Unlike the earth, the most perfect object in the sky is a sphere, the most perfect figure is a circle, and the most perfect motion is a "regular circular" motion. Therefore, in his work, Nizami first explained the "regular circular motion" of the planets, then the motions of the planets at different speeds and the set of "regular circular" motions, and finally the geocentric system.

Fales said that the first ore of the world was water: according to his philosophy, clouds were formed from the movement of water - evaporation, lightning and fire were formed from the movement and friction of water particles between cloud-cloud, cloud-tree. Because fire can burn in the air, air was formed. When the water thickens, it turns to ice:

"Sudan bu kainat yarana bilməz - Deyə inkar etmək istəsə hər kəs,
Nütfəni bir anlıq qoy salsın yada - Sözümə sübutdur, dəlildir o da".

In Belinas's language, Nizami said:

Onlardan birinci- işıqlı oddur, Dünyanın ən yüksək tağı da odur.
İkinci - küləkdir, hərəkətdədir, Hərəkət etməzsə bilinməz nədir.

Üçüncü - sudur ki, tərəvət verər, Hər şeyə təzəlik, lətafət verər.

Dördüncü - torpaqdır tapdayır əyyam, Tapdanan köksündən toz qalxır müdam”.

In Nizami's works, there are also physical concepts, the scientific basis of which was determined in his time. Let's look at the following verses in his "Treasure of Mysteries":

Günəş qalxan atarkən, üfüqlər qanla doldu,
Yer suya qalxan atdı, sular kölgəli oldu.

Here, Nizami figuratively described the red color of the horizon in connection with the rising and setting of the sun, the blue color of the sky, its shadow falling into the water, the linear distribution of light, the scattering property, and the color separation of light in the atmosphere.. The "Seven Beauties" says:

Dəmir çoxda ki, incədir, başdır. Getdiyi yol ki var maqnitli daşdır.

Nizami shows here that no matter how sharp and delicate the iron sword is, the magnetic stone will not allow it to attract and lift the sword (iron) on the way. Nizami, on the other hand, notes that he is knowledgeable about the skillful use of the term "magnetic force of gravity" and the force of gravity to show a social environment that does not allow people to lean on their sharp swords.

Through his poems, Nizami acquainted with the scientific-theoretical researches and ideas of the ancient Greek philosophers, directed a kind of Oriental scientific thought, scientific researches of Oriental scholars in a certain direction. Comments on the sentence of Socrates:

“Maqnit olmasaydı eşqin əsiri, çəkməzdi özünə dəmir zənciri,
Kəhrəbanın eşqə düşməsə canı, elə cəzb etməzdi quru samanı,
Dünyada gövhər var, daş var nə qədər, onlar nə bir saman, nə dəmir çəkər”

Here the magnetic properties of objects are explained, ferro, dia and para magnets, charged and uncharged objects, although not in the way we now call them, are shown as different objects, and their magnetic interactions are given on the basis of the knowledge of the time.

Nizami states the essence of the electrification of objects, the unity of electric and magnetic fields in "Khosrov and Shirin":

Belədir dağların dönməz ilqarı, daşa basır ona kəc baxanları.
Düşmənin boğazı maqnitə bənzər, oxun nizəsini özünə çəkər.

The magnet attracts metal objects. But the strongest of them is iron. In the solar wind, the particles and the magnetic field propagate as a whole, creating their uniform motion.

One common property of the objects of the universe - the interaction of gravity - is the notion associated with the universal law of gravitation, written in the name of Isaac Newton in the XVIII century, long after Nizami's very important meetings. From Nizami's statements about the existence of gravitational interactions between objects:

Göyə doğru əgər çox qalxırsa su, yenə torpaq olar ən son arzusu".
Kainatda hər şey cəzbə bağlıdır, filosoflar bunu Eşq adlandırır.

Love is opposed as a common property of the world, as a proof of its existence, as a condition of existence.

Sheikh Nizami Ganjavi, referring to the meetings of Biruni, Farabi, Omar Khayyam and other Eastern thinkers, gave and justified the law of universal gravitation to which the whole universe is subject, and showed that the planets and celestial bodies are subject to this law. In the poem "Khosrov and Shirin" Nizami wrote very clearly, without any ambiguity:"

"Hər şey Kainatda cəzbə bağlıdır".

Everything in the universe is subject to gravity, the force of gravity. This idea means that all beings in the universe are attracted to each other, and that what we see is a manifestation of attraction. In Egypt, the word "universe" is very important, because it means that the event takes place not only on Earth, not in close proximity to the Earth, but in the whole universe, among all objects. It turns out that it is not true that some of our thinkers approach the works of Nizami Ganjavi as mere works of art. We need to approach them as a scientific work, a commentary on one or another physical or natural phenomenon. In order not to create conditions for the subsequent assimilation of these and other ideas, the works of geniuses such as Nizami and Nizami should be thoroughly studied, the facts contained in the works, their presentation, explanation and connection should be shown. These works are not an account of ordinary life events, but of a love story between two people. In these works, the rebuke of the ruler, the gaze and rebuke of those who try to discredit the poet, the ignorance of the majority, to write in front of those who live day by day, to explain and explain what they know they can not deny, to write with great respect to his predecessors is a characteristic of geniuses. The poet and thinker writes in "Leyli and Majnun":

“Yerin hüdudundan o tərəfdə də.. buludlar fələklər qarışır yenə,
Onlar bir-birinə sarılmış bərk-bərk, Hamısı tor kimidir gəzir kürə tək.

Bu kürə şəklində yalnız Yer deyil, Hər xətt hərlənir, yuvarlaqdır bil...

Nizami Ganjavi, who said many years before Galileo that the earth was spherical and rotated, also pointed to the rotation of the universe. Interestingly, the discovery of the rotation of the universe was written in 1927 in the name of the Dutch astronomer Oort.

Nizami showed that the Earth rotated in the twelfth century with the language of poetry. He said that not only the Earth but all the celestial bodies in the universe were in rotation. He claims that the linear motions we see are part of some great circular motion. Takes a crooked movement as the main movement. This means that any charged particles and other objects will move in a curved line under the influence of this or that force. Note that space is a sign that the time plane is so curved.

Nizami touched upon optical phenomena and light dispersion. As we know, sunlight is scattered in space, in the atmosphere, and separated into spectra until it reaches the earth. The sky turns blue.

In one of his poems, the great philosopher Nizami writes with special skill that only the color white exists on Earth and that all other colors are derived from it. It was later studied by Newton and written in his name.

Səma saflığında gümüş qədər ağ. Günəş kimi təmiz gün kimi parlaq.
Gündüzün işığı ağılıdır, Aynın yaraşığı ağılıdır.
Rənglər sünidir dünyada bir ağ. Bilməyir sünilik, bilməyir boyaq.

Nizami Ganjavi, who had a great interest in natural sciences and the laws of celestial mechanics and considered experience to be one of the basic principles of scientific proof, applied this knowledge in poetry. The fact that he does not stand aside shows that he is inwardly stable, resilient, and conservative.

Nizami covered his empirical ideas with poetic images, which could lead to serious discussions, thus protecting and insuring himself from possible moral and sometimes physical attacks. Nizami never put his head under the sword of the rulers.

At the end, I present a poem I wrote to Nizami Ganjavi's poem:
Maqnit olmasaydı Eşqin əsiri, çəkməzdi özünə dəmir zənciri.
Olmasaydı utandırmaq niyyəti, yetirməzdi ona, yarpaqlı bir ənciri.
Maqnitdə cisimlər aşkar etdi bu xisləti. Damşıb, məşvərət, razılaşdılar xəlvəti,
Bir an içində göz görəsi hər təfərə doldular, Kainatın bitəcəkmə
genşlənmək şəhvəti.
Cazibə deyib bir tələdə qurdular, Birləşib maqnitlə, hələ əlbirdə oldular.
Əsir etdi sevəni, saldı onu zəncirə, Sevəni dəyişdi, möhtac etdi əncirə.
Bəzisi hə dedi, qaçaqkən ağışuna. Bəzisi naz etdi, da inkar etmədi.

Qalamı üz döndərib, arxa çevirdi, Bəraye ehtiyat, heç sözdə etmədi.
 Eşqdir çəkər imtahana, verər cəfanı, Maqnitdə dəyişdi, qalmaq
 biganə buna.
 Əslən sevməkdimi onun niyyəti? Maqnitə qarşı çatacaqımı hiyyəti.
 Ətrafda nə var zəncirdə ikən, tək sevgisizkən dolaşanda var.
 Qalmaq biganə min sevgi ilə, atılıb, boynuna sarmaşanda var.
 Sayları çoxaldı, artdı hörməti, çatdı qəddi həddə, verdi izzəti.
 Sonda doymaq bilməz, hey istər yenə, qalar sümükləri, verər tün əti,
 Dözə bilməz, çatlar, itirər son ləzzəti.
 Maqnit olmasaydı da eşqin əsiri, görünməz etməzdilər digər sevgini.
 Ulduzlar verməyəcək amma, bu sirri, Yer üz döndərib, arxa çevirdi,
 Göründü sevgilər, dərd qəmləriylə.
 Düşündük sevgi söhbəti düz olar hərgah, Yanlılıq məkanın
 xislətindədir.
 Zaman baş qaldırır, qurur hissiylə: O, həmdə mənim niyyətimdədir!
 Hərə öz dilində, öz ahəngində, kaş bu iki şıltaq edəydi biət,
 Gözləmə, kainat bu halə durmaz. Sən sakit dursan, cümlə yoxam, mən ölərəm
 Tələssən, edib fəryad mən arxanca gələrəm,
 Maqnitdə eşqə məhəbbət varkən, tanımaz sevgini sakit durunca,
 Digəri hər dəfə fəryad edərkən, ayrılmaz bir can olur, tükü yanınca..
 Bir- birini görəməz ki onlar..... nədən bəs qurmuşlar hiyləni erkən.....
 Nə görürük, tabe olar bu nəzmə, görünməyənlərdə tabedirlər bir əzmə.
 Əlimizdə dəftər qələm olsada, düşüdüklərimiz getməyəcəkdir həzmə.
 Eşq ilə sevgi oynu olmadan, gedəcəyik, ömrümüzdən doymadan.
 Maqnitə göstərib Eşqin əsiri, Allahdan istərik Eşqə nəsiri.
 Yaşayaq biz, gül tək solmadan, yaşamaq mümkünmü aşiq olmadan?!

Nizami Ganjavi's ability to present scientific and moral, pedagogical, natural and astronomical, cosmological and astrological ideas and results, his scientific and astronomical ideas being confirmed by modern science, not only confirming that he was a master of words, but also known in natural sciences and astronomy. It is not a mistake to call him the great philosopher, scientist, astronomer, pedagogue, psychologist, and political scientist of the century who was able to present the scientific knowledge he perfected. He is an astronomer, naturalist of the Nizami period, one of the founders of natural philosophy. The works of Sheikh Nizami should be studied in all fields, and the advantages of the Eastern world, the peculiarities of Eastern scholars, and the culture of the East should be studied and propagated.

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