

XÜSUSİ BURAXILIŞ

AZƏRBAYCAN MİLLİ ELMLƏR AKADEMİYASI

AZƏRBAYCAN ASTRONOMİYA JURNALI

NİZAMİ GƏNCƏVİ İLİ FİZİKA VƏ LİRİKA-VIII

2021, Special Issue

AZERBAIJAN NATIONAL ACADEMY OF SCIENCES

ASTRONOMICAL JOURNAL OF AZERBAIJAN

Bakı-2021 / Baku-2021

ASTRONOMICAL JOURNAL OF AZERBAIJAN

Founded in 2006 by the Azerbaijan National Academy of Sciences (ANAS)
Published in the Shamakhy Astrophysical Observatory (ShAO) named after
N. Tusi, ANAS
ISSN: 2078-4163 (Print), 2078-4171 (Online)

Editorial board

Editor-in-Chief:	Dzhalilov N.S.
Associate Editor-in-Chief:	Ismailov N.Z.
Secretary:	Adigozalzade H.N. <i>Shamakhy Astrophysical Observatory, ANAS</i>
	Guliyev A.S. <i>Shamakhy Astrophysical Observatory, ANAS</i>
	Babayev E.S. <i>Baku State University</i>
	Atai A.A. <i>Shamakhy Astrophysical Observatory, ANAS</i>
	Huseynov N.A. <i>Shamakhy Astrophysical Observatory, ANAS</i>
	Huseynov V.A. <i>Shamakhy Astrophysical Observatory, ANAS</i>
	Rustamov C.N. <i>Shamakhy Astrophysical Observatory, ANAS</i>
Technical Editors:	Tagiyeva J.J. , Salehli O.M.
Editorial Office address:	ANAS, 30, Istiglaliyyat Street, Baku, AZ-1001, the Republic of Azerbaijan
Address for letters:	ShAO, P.O.Box №153, Central Post Office, Baku, AZ-1000, Azerbaijan
E-mail:	azaj@shao.science.az
Phone:	(+994 12) 510 82 91
Fax:	(+994 12) 497 52 68
Online version:	http://www.aaj.shao.az

ASTRONOMICAL JOURNAL OF AZERBAIJAN

2021, Special Issue

Contents

A word about the great Azerbaijani poet Nizami Ganjavi <i>I. A. Habibbeyli</i>	4
Очарование слова Низами на перекрестке научной идеи и поэтической силы <i>A. M. Гашимов</i>	7
Introductory speech at the VIII Conference "Physics and Lyrics" on "Mathematical-astronomical view in Nizami Ganjavi's works " at the Shamakhy Astrophysical Observatory named after Nasraddin Tusi <i>R. M. Aliguliyev</i>	16
"Mathematical-astronomical view in Nizami Ganjavi's works " at the Shamakhy Astrophysical Observatory named after Nasraddin Tusi <i>N. A. Dzhililov</i>	19
Reports:	
A modern scientific view on the study of Nizami Ganjavi's creativity Shamakhy Astrophysical Observatory named after Nasraddin Tusi <i>A. A. Atai</i>	23
Nizami Ganjavi in the research of arabic scientists <i>I. A. Hamidov</i>	30

Scientific and Literary Reflection of the Seasons in the Works of Nizami Ganjavi	37
<i>T. G. Mammed</i>	
On Nizami Ganjavi's cosmological outlook	42
<i>N. A. Huseynov</i>	
Natural (universe) phenomena in the works of Nizami Ganjavi	49
<i>M. M. Bashirov</i>	



NIZAMI GANJAVI
(1141-1209)

880th
ANNIVERSARY

**Azərbaycan Respublikasında
2021-ci ilin “Nizami Gəncəvi İli” elan edilməsi haqqında
Azərbaycan Respublikası Prezidentinin**

SƏRƏNCAMI

Dünya ədəbiyyatının görkəmli nümayəndəsi, dahi Azərbaycan şairi və mütəfəkkiri Nizami Gəncəvi bəşəriyyətin bədii fikir salnaməsində yeni səhifə açmış nadir şəxsiyyətlərdəndir. Nəhəng sənətkarın xalqımızın mənəviyyatının ayrılmaz hissəsinə çevrilmiş parlaq irsi əsrlərdən bəri Şərqi misilsiz mədəni sərvətlər xəzinəsində özünəməxsus layiqli yerini qoruyub saxlamaqdadır.

Nizami Gəncəvi ömrü boyu dövrün mühüm mədəniyyət mərkəzlərindən olan qədim Azərbaycan şəhəri Gəncədə yaşayıb-yaradaraq, Yaxın və Orta Şərq fəlsəfi-ictimai və bədii-estetik düşüncə tarixini zənginləşdirən ecazkar söz sənəti incilərini də məhz burada ərsəyə gətirmişdir. Nizami Gəncəvinin geniş şöhrət tapmış “Xəmsə”si dünya poetik-fəlsəfi fikrinin zirvəsində dayanır. Mütəfəkkir şair çox sayda davamçılarından ibarət böyük bir ədəbi məktəbin bünövrəsini qoymuşdur. Nizaminin ən məşhur kitabxana və muzeyləri bəzəyən əsərləri Şərq miniatür sənətinin inkişafına da təkan vermişdir.

Nizami dühası hər zaman dünya şərqşünaslığının diqqət mərkəzində olmuşdur. Ölkəmizdə Nizami sənətinin öyrənilməsi və tanıdılması sahəsində xeyli iş görülmüş, əsərlərinin nizamişünaslıqda yüksək qiymətləndirilən elmi-tənqidi mətni hazırlanmış, kitabları nəfis tərtibatda və kütləvi tirajla nəşr edilmişdir. Nizaminin ədəbiyyatda və incəsənətdə yadda qalan obrazı yaradılmışdır. Mütəfəkkir şairin doğma şəhəri Gəncədə məqbərəsi, Bakıda, Sankt-Peterburqda və Romada heykəlləri ucaldılmışdır. Azərbaycan Milli Elmlər Akademiyasının Ədəbiyyat İnstitutu və Milli Azərbaycan Ədəbiyyatı Muzeyi Nizami Gəncəvinin adını daşıyır. Böyük Britaniyanın Oksford Universitetinin Nizami Gəncəvi Mərkəzi uğurla fəaliyyət göstərir.

Nizami Gəncəvinin yubileyləri ölkəmizdə hər zaman təntənə ilə keçirilmişdir. Dahi şairin 800 illik yubileyi onun irsinin tədqiqi və təbliğində əsaslı dönüş yaratmışdır. Azərbaycanın klassik ədəbi-mədəni irsinə həmişə milli təəssübkeşlik və vətənpərvərlik mövqe-

yindən yanaşan Ümummilli lider Heydər Əliyev Nizami irsinə də xüsusi diqqət yetirmişdir. Heydər Əliyevin təşəbbüsü ilə 1979-cu ildə qəbul olunmuş “Azərbaycanın böyük şairi və mütəfəkkiri Nizami Gəncəvinin irsinin öyrənilməsini, nəşrini və təbliğini daha da yaxşılaşdırmaq tədbirləri haqqında” qərar Nizami yaradıcılığının tədqiqi və təbliği üçün yeni perspektivlər açmışdır. Ölməz sənətkarın 1981-ci ildə Ulu Öndərin bilavasitə təşəbbüsü və iştirakı ilə keçirilən 840 illik yubiley mərasimləri ölkənin mədəni həyatının əlamətdar hadisəsinə çevrilmişdir. 2011-ci ildə Nizami Gəncəvinin 870 illiyi dövlət səviyyəsində silsilə tədbirlərlə geniş qeyd edilmişdir.

2021-ci ildə dahi şair və mütəfəkkir Nizami Gəncəvinin anadan olmasının 880 illiyi tamam olur. Azərbaycan Respublikası Konstitusiyasının 109-cu maddəsinin 32-ci bəndini rəhbər tutaraq, qüdrətli söz və fikir ustasının insanları daim əxlaqi kamilliyə çağıran və yüksək mənəvi keyfiyyətlər aşılaman zəngin yaradıcılığının bəşər mədəniyyətinin nailiyyəti kimi müstəsna əhəmiyyətini nəzərə alaraq qərara alıram:

1. 2021-ci il Azərbaycan Respublikasında “Nizami Gəncəvi İli” elan edilsin.

2. Azərbaycan Respublikasının Nazirlər Kabineti “Nizami Gəncəvi İli” ilə bağlı tədbirlər planı hazırlayıb həyata keçirsin.

İlham ƏLİYEV
Azərbaycan Respublikasının Prezidenti
Bakı şəhəri, 5 yanvar 2021-ci il

A WORD ABOUT THE GREAT AZERBAIJANI POET NIZAMI GANJAVI

*Isa HABIBBAYLI**

Vice-President of the Azerbaijan National Academy of Sciences, General Director Institute of Literature named after Nizami Ganjavi, Academician

The prominent poet and thinker, one of the great literary personalities endowed by the Azerbaijani people to the treasury of human culture Nizami Ganjavi (1147-1209) became far-famed for his immortal works.

Nizami Ganjavi is one of the most outstanding classics of world literature. The genius Nizami Ganjavi, a literary sun raised from the East, is known for his great and everlasting art. The genius Nizami Ganjavi born in the East is a mighty literary figure belonging to all mankind. Nizami Ganjavi like Alighieri Dante, Miguel de Cervantes, William Shakespeare, Amir Khosrow Dehlevi, Abdurrahman Jami, Alisher Navai, Muhammad Fuzuli, Honore de Balzac, Victor Hugo, Leo Tolstoy, etc. is a mighty Azerbaijani poet belonging to mankind on the same level as foreign artists who are the national pride of the people whom they represent.

Nizami Ganjavi is the Greater Caucasus summit of Azerbaijani literature.

Nizami Ganjavi's "Khamsa" are the immortal, indestructible poetic patterns of Azerbaijani literature, like the Gobustan rock paintings.

By very national and human nature of his immortal art, Nizami Ganjavi is the Dede Gorgud of Azerbaijani written literature. Nizami Ganjavi's "Khamsa" and the epos "Kitabi-Dede Gorgud" are the two peaks of Azerbaijani written and folk literature.

"Khamsa" like the epos "Kitabi-Dede Gorgud", is a solid foundation of Azerbaijani literature and its eternal summit. Like the epos "Kitabi-Dede Gorgud", "Khamsa" is a masterpiece of Azerbaijani literature, and a magnificent literary monument of the world's literature on the same level.

Nizami Ganjavi was born, lived and created in an unusually rich historical period, in the 12th century in one of the most important administrative and cultural centers of Azerbaijan, in Ganja city. All his life he was engaged in literary activity in his hometown of Ganja. Nevertheless, his poems collected under the

* E-mail: isa.habibbeyli@science.az

name “Khamsa” were read and studied in the Turkish-Muslim world since the poet’s lifetime, and brought him great fame.

The “Treasury of Mysteries” is a great treasure of words and wisdom of Nizami Ganjavi.

“Khosrow and Shirin” is an instructive saga of the power of love.

“Leyli and Majnun” is a romantic love poem born in world literature before “Romeo and Juliet”.

“Seven beauties” is the world beauty of Azerbaijani literature, one of the seven wonders of world literature. “Iskender-nameh” is a magnificent epic about a just ruler and an ideal society.

No matter, where of the world you look from, the East or the West, Nizami Ganjavi shines like the sun in the sky of poetry and art. As a whole, the cultural world accepts Nizami Ganjavi as a genius poet, a great master and thinker with human mentality. In this sense, Nizami Ganjavi is a great hero of word art. There are edifying plots and bright, thought-provoking, memorable images in his works taken from the lives of many countries and peoples of the world. The famous poems of the immortal creator called “Khamsa” are like the encyclopedia of literature of the West and the East. Nizami Ganjavi engraved in literature the events and personalities of a wide geographical area beginning from Greece to India, from Arabia to Russia, from Iran to the Balkans and even Africa. No other master in world literature, except Nizami Ganjavi has been able to illuminate marches of the great conqueror Alexander the Great covering almost half of the planet, on such a high artistic level. Fame and power of Nizami Ganjavi as a master can be compared to that of Alexander the Great. Countries conquered by Alexander’s sword were conquered with the pen of Nizami. In this sense, Nizami Ganjavi is the Alexander of Macedonia of world literature. The genius poet brought to Azerbaijani literature the fame of Alexander the Great.

It is difficult to state another poet in Azerbaijani literature who has paid as much attention to the need for the scientific factor in the life of society and humanity as Nizami Ganjavi. He deeply studied the teachings of Plato, Aristotle, and Socrates, prominent figures in ancient Greek science, and highly appreciated their contribution to the development of humanity. The genius master’s ideas about history, geography, philosophy, mathematics, astronomy, medicine are important not only for his time, but also for today. His conclusions on the natural and social sciences and the phenomena of the universe reflect serious scientific matters. With his far-sighted scientific ideas, Nizami Ganjavi was ahead of well-known scholars of the East and the West. In this sense, Nizami Ganjavi is a genius poet with the most universal intelligence in Azerbaijani literature. According to his extensive scientific views, Nizami Ganjavi can be compared only to the great Greek

scholar Aristotle. Nizami Ganjavi is a mighty representative and ambassador of Azerbaijan in world literature.

The name of Nizami Ganjavi was immortalized in his homeland, in Azerbaijan. The monument of Nizami Ganjavi was erected in Baku. There are research institutes, schools, museums and streets named after Nizami Ganjavi in our country.

The novel "Sword and the Pen" by Mammad Said Ordubadi widely deals with the life, environment and ideals of Nizami Ganjavi. People's artist Gara Garayev's ballet "Seven Beauties", People's poet Samad Vurgun's "Farhad and Shirin", People's writer Mehdi Hussein's "Nizami" dramas, People's artist Niyazi's opera "Khosrow and Shirin", People's artist Fikret Amirov's ballet "Nizami", "Nizami" opera by People's artist Afrasiyab Badalbeyli, the play "Atabeyler" by People's poet Nariman Hasanzadeh, People's artist Tofiq Bakikhanov's ballet "Good and Evil" has been successfully staged in Azerbaijani theaters.

The film "Nizami", based on the screenplay by Isa Huseynov, has won great sympathy. Nizami Ganjavi's works have been repeatedly published in Azerbaijani language. The poet's works are sounded in Turkish, English, Russian, Chinese, German, French, Italian, Arabic, Hindi, Polish, Bulgarian, Georgian, Kazakh, Kyrgyz, Turkmen and other languages. The monuments of Nizami Ganjavi were erected in different cities of the world: Moscow, St.Petersburg, Beijing, Rome Tashkent, Chişinău (Kishinev), Luxembourg and Cheboksary. At the national level and with great solemnity were celebrated the 800th, 840th, 850th and 870th jubilees of Nizami Ganjavi in Azerbaijan.

At present, under the President of the Republic of Azerbaijan Ilham Aliyev's decree signed on January 5, 2021, the 2021 year is being widely celebrated in our country and around the world as the "Year of Nizami Ganjavi". On this occasion, the works of Nizami Ganjavi are again published in Azerbaijani and in the languages of the world. Also research works are written about him on the basis of modern requirements of the new era, scientific-critical texts of his poems are being prepared and work is being done on "Nizami encyclopedia".

The immortal works of the great master Nizami Ganjavi are everlasting, topical, human and on modern lines. Nizami is a great herald of humanism, justice, equality, science and wisdom for all times.

Prominent Azerbaijani poet Nizami Ganjavi has gained eternity as a powerful poet and a great thinker of all times and the future.

The great ideals of Nizami Ganjavi shed light on the future development of the people of Azerbaijan that he belongs to and the world as a whole.

ОЧАРОВАНИЕ СЛОВА НИЗАМИ НА ПЕРЕКРЕСТКЕ НАУЧНОЙ ИДЕИ И ПОЭТИЧЕСКОЙ СИЛЫ

*Ариф ГАШИМОВ**

*Первый вице-президент НАНА, Академик-секретарь, Генеральный директор
Института Физики*

АННОТАЦИЯ

Представленная статья посвящена творчеству великого азербайджанского поэта и мыслителя Низами Гянджеви. Анализ поэтического наследия Низами производится в статье через призму отражённых в нём научных и интеллектуальных идей, что является неотъемлемым условием полноценной оценки и правильного понимания сути поэтического наследия великого мыслителя Средневековья. В достижении этой цели неопределима роль вот уже несколько лет систематично и последовательно организуемой под руководством академика Исы Габиббейли конференции «Физика и Лирика».

Как известно, Президент Азербайджанской Республики господин Ильхам Алиев объявил 2021 год «Годом Низами Гянджеви». Это лишний раз свидетельствует о том большом значении, которое господин президент придает национально-духовным ценностям и культуре азербайджанского народа.

Гениальный азербайджанский поэт Низами Гянджеви является мастером слова, который принадлежит духовной сокровищнице не только Азербайджана, но и всего мира. Его творчество свидетельствует о том, что ценность этой сокровищницы не ограничивается лишь ее художественными достоинствами. Волшебство этим художественным текстам придают также заложенные в них научные идеи, то есть наряду с поэтическим применением художественного слова поэт, перейдя границы своего времени, указывает на научные закономерности, которые стали известны спустя века, что свидетельствует об интеллектуальном содержании творчества Низами. С этой точки зрения для того, чтобы полностью понять и оценить творчество великого мыслителя, нельзя ограничиваться анализом лишь художественных фактов. Наряду с гу-

* E-mail: arif@physics.ab.az

манистическими взглядами и поэтическим мастерством Низами необходимо изучать и пропагандировать его научные и интеллектуальные идеи. Считаем, что эти исследования создадут возможность для еще более основательного изучения параметров, благодаря которым Низами был удостоен статуса гениального поэта. Наряду с филологами, в этих изысканиях должны участвовать физики и представители других научных отраслей. В творчестве Низами научные закономерности преподносятся под метафорической завесой художественного слова, и поэтому для точного понимания этих материалов нужен мультидисциплинарный подход. Все это является показателем того, что в творчестве гениального мыслителя наука и поэзия образуют органичное единство.

Естественно, предметная (отраслевая) классификация и степень интегративности наук в средневековом мусульманском Востоке больше опирались на энциклопедическую платформу, то есть то, что личность, занимающаяся какой-либо областью науки или искусства, являлась носителем энциклопедических знаний, было нормой времени. В этом смысле энциклопедические знания проходили красной линией через общее научно-философское мировоззрение каждого мыслителя средневекового мусульманского Востока. Однако исследования свидетельствуют о том, что типология и структура участия интеллектуализма в творчестве Низами не были лишь парадигматическим показателем времени. Типология участия научных знаний в творчестве Низами находится на уровне интеллектуальной обработки и появления новых научно-философских выводов. В этом смысле поэтико-философское мировоззрение мыслителя опирается на достаточно многогранный научный фундамент. Конечно, отражение научных знаний не было вопросом, относящимся к стратегическим целям Низами. Однако наука и ее отдельные положения составляли для него содержательную основу выразительности поэтических произведений.

С первого взгляда кажется, что типы научного и художественного мировоззрения основательно отличаются друг от друга. Но в творчестве Низами Гянджеви мы видим эти типы мировоззрения в органичном единстве. Научность у Низами никогда не выражается за счет потери художественности.

Наоборот, своеобразные ограничения выразительности художественного слова не могут помешать ему выразить свои точные научные мысли. В этом смысле можно считать творчество Низами уникальным феноменом на перекрестке научной идеи и поэзии. Низами является не только бесподобным художественным талантом, который способен удовлетворить эстетический вкус широкой читательской аудитории, но и редким мыслителем, выдвигающим модели концептуального мышления о Бытие и его закономерностях. Глубокое освоение им научных знаний своего времени поэт выразил в

художественной форме в следующих строках:

Dünyada nə qədər kitab var belə,
Çalışıb əlləşib gətirdim ələ.
Ərəbcə, dəricə yeri düşərkən,
Buxari, Təbəri əsərlərindən...
İzlədim yolunu səuyarələrin,
Nə ki elmlər var, gizli və dərin,
Oxudum xəbərdar oldum da vardım,
Varlıqlar sirrini yer-yer axtardım.

Углубился я в сказанья, стал вникать во тьму
Тайн, рассеянных когда-то по свету всему.
На арабском прочитал я все и на дари,
Книгу Бухари прочёл я, книгу Табари.
Чтобы не было пробелов, не было потерь,
Переполненных хранилищ отпирал я дверь.
Пехлевийские в подвалах свитки я искал,
Со свечою – по листку их бережно сшивал.

На самом деле здесь Низами выразил последовательность освоения гносеологических основ науки:

1. Читать – первичное знакомство с научной информацией;
2. Отпирать дверь хранилищ – узнавать, быть осведомленным;
3. Бережно сшивать – процесс интеллектуальной обработки научной информации.

В представлении поэта самым важным является последний этап. Если ты не проводишь интеллектуальную обработку полученной научной информации, процесса образования новых качественных знаний не происходит.

При рассмотрении изучения творчества Низами с различных научных аспектов можно лучше понять научные параметры его поэтического наследия. В Азербайджане наследие Низами было изучено с точки зрения многих отраслей наук.

Одна из заслуживающих внимания черт заключается в том, что в своем творчестве Низами органично объединил знания, относящиеся к различным сферам науки. Будучи поэтом редчайшего таланта, Низами является также и социологом. Красной линией в его творчестве проходят вопросы организации общества, взаимоотношений между отдельными социальными слоями, отношений между государством и народом, правителем и обществом.

Низами Гянджеви также философ. Комплексное познание Бытия, оценивание человека в контексте подобной комплексной системы, взаимоотношения человек-действительность, человек-Аллах, человек-природа, природа-общество – все эти вопросы составляют крупные пласты семантики поэзии Низами. Низами является также и антропологом. В произведениях Низами рассматриваются такие вопросы, как быт, образ жизни, традиции и обычаи отдельных народов и различия между ними. Низами также и историк. Темы трех из его поэм – «Хосров и Ширин», «Искендер-наме» и «Семь красавиц» – взяты непосредственно из истории. И в других произведениях поэта представлен ряд исторических образов и фактов. Наряду с вышеперечисленными отраслями общественных наук, в творчестве Низами нашли отражение и естественные науки, среди которых особое место принадлежит физике. Обратимся к отрывку из произведения гениального Низами «Хосров и Ширин»:

Maqnit olmasaydı eşqin əsiri,
 Çəkməzdi özünə dəmir zənciri.
 Kəhrəbanın eşqə düşməsə canı,
 Belə cəzb etməzdi quru samanı.
 Dünyada göhvər var, daş var nə qədər,
 Onlar nə bir saman, nə dəmir çəkər.
 Bu saysız, hesabsız maddələr yenə,
 Bax gör meyl edirlər mərkəzlərinə.
 Göyə doğru çox qalxarsa su,
 Yənə torpaq olar ən son arzusu.
 Kainatda hər şey cəzbə bağlıdır,
 Ariflər bunu eşq adlandırır.

И если бы весь мир не охватила ярь,
 Не мог бы привлекать соломинку янтарь.
 Но сколько есть камней, которые не в силах
 Привлечь соломинку, – бездушных и застылых.
 И в веществах во всех – а можно ли их счесть?
 Стремленье страстное к сосредоточью есть.
 Огонь вскипит в земле, и вот в минуту ту же
 Расколет землю он, чтоб взвихриться наружи.
 И если в воздухе и держится вода,
 Все ж устремиться вниз придет ей череда.
 Для тяготения в чем сыщется преграда?
 А тяготение назвать любовью надо.

Опираясь на анализ исследователей, можем отметить, что в этих строках поэт говорит о малоизвестном в тот период понятии электромагнита и, в то же время, доказывает наличие важного закона, ныне известного как «закон всемирного тяготения». Также он указывает, что распространение в пространстве периодически меняющихся электрических и магнитных полей является электромагнитными волнами. Это доказательство восхищает человека своей точностью, выражением реальных фактов в поэтическом стиле. Напомним, что «закон всемирного тяготения» был открыт в физике намного позже эпохи Низами, в XVII-XVIII вв. И. Ньютоном и М.Фарадеем.

Обратимся к еще одному отрывку, в котором повествуется о физической закономерности:

Əvvəl mövcud oldu tək bir hərəkət,
 Onu iki yerə ayırdı hərəkət sürət.
 Bu iki hərəkət gəlib bir yerə
 Yeni bir hərəkət doğurdu hərə.
 Əvvəlki hərəkət ayrıldı yenə,
 Bu ucu qoşuldu bir-birinə.
 Üç xətt zahir oldu üç hərəkətdən,
 Üç dövrə yarandı ondakı xəttədən.
 Mərkəzdən ayrıldı həmin dövrələr.
 Yaranıb ortaya çıxdı bir cövhər.
 Cövhər keşməkeşdən doğub parladı,
 Hərəkət eləyən cism oldu adı.

Знай: возникло движенье. Вначале одно.
 Ускоряясь, второе родило оно.
 И когда их сомкнуло одно положенье,
 То из каждого вышло иное движенье.
 Стало первое вечно единым, а три
 Неизбежно столкнулись, – и вот посмотри;
 Тотчас линии три потянулись. Друг друга
 Огибая, из линий три выгнулись круга.
 Стала четких кругов сердцевина видна,
 И весомой, вещественной стала она.
 Было дело материи сделанным делом,
 И подвижным рассудок назвал ее телом.

В этих строках Низами Гянджеви выступает в качестве профессионального физика, намного опередившего интеллектуальный уровень своего вре-

мени. В стихотворении Низами в качестве первого фактора видит движение, а затем говорит о скоростном движении, возникающем под воздействием изменения скорости, и указывает на возникновение криволинейного и, наконец, вращательного движения. В науке об этом впервые написал в 1632 году известный итальянский ученый-физик Галилео Галилей.

Анализ произведений Низами Гянджеви свидетельствует о том, что великий мыслитель еще в XII веке увидел и осознал наличие законов сохранения во всем, что существует во Вселенной, в природе, и отразил это в своей поэзии.

Su dönsə torpaq-çiçək ətrinə,
Qayıdar əslində o bir gün yenə...
Torpaq çürüyən bədənlərimiz,
Dağlır, dəyişir, yox olmur təmiz.
Yerində qalarsa, o dağıntılar,
Bir yerə yığanda yenə canlanar.
Torpağa tökülən şeylər tamamən,
Torpaqdan dirçəlib qalxır yenidən.

Создала сила пламени воздух, – ведь он,
Как и пламень, со свойством горячим рожден.
В свойстве воздуха к влаге нашлось тяготенье;
Круговое ему было чуждо движенье.
В сердцевину закапала влага, тогда
Разливаясь, явилась благая вода.
Усмирялась и стихла вода; из осадка
Вышла почва. Земли разрешилась загадка.

В этих строках Низами Гянджеви отразил законы сохранения вещества и материи и указал, что в природе, во Вселенной ничего не исчезает, не теряется, просто переходит из одной формы в другую, из одного качества в другое.

В произведении «Сокровищница тайн» Низами Гянджеви считает процесс познания сущностью человеческого бытия. В стиле, близком к современным научно-философским подходам, он призывает людей учиться, считает процесс обучения неделимой частью природы человека:

Zəka – sənin ruhundur, onsuz quru bədənsən,
Ruh – xəzinə, can – tilsim xəbərsizsən nədən sən?
Varlığında bilməsən yoxmu, varmı xəzinə,
Sındırmasan tilsimi, nur saçarmı xəzinə?

Разум – та же душа, ей зиндан – твоё брэнное тело,
Меж сокровищ её талисман – твоё брэнное тело.
Свет хранилища тайн на тебя изольтётся ль теперь,
Коль ещё не разбит талисман, замыкающий дверь?

В представленном тексте слова «душа» и «тело» могут быть восприняты на различных уровнях. Здесь «тело» выражает материальную реальность. Гениальный поэт, считающий разум сущностью человеческого бытия, от всего сердца верил в то, что в процессе познания человек обязательно найдёт сокровищницу, которая скрывается за материальной реальностью.

Ещё одной линией, которая проходит красной нитью в творчестве Низами, полным научных идей, философских взглядов и гуманистических ценностей, является уверенный призыв к обучению и исследованию. В произведении «Лейли и Меджнун» он пишет:

Təbiət quranda xilqətimizi,
Başqa səhifədə yazmışdır bizi,
Anlayıb, düşünək hər şeyi gərək,
Hər sirri açmağa hünər göstərək.
Yerləri-göyləri öyrənək bir-bir,
Qalmasın bizimçin açılmamış sirr.

Как из стихий Он существа творил,
Он наш листок особо начертил. . .
Чтобы видеть сущность бытия могли,
Узла всех дел начало чтоб нашли.
Чтоб небо, землю мы могли узреть,
По одному могли их рассмотреть.

Бесконечно веря в разум человека, гениальный поэт отмечает, что благодаря знаниям и обучению человек может познать и самого себя. Так, в произведении «Семь красавиц» Низами пишет:

Sən çalış yaxşıca öyrən dünyanı,
Vəşəri, bitkini, daşı, heyvanı.
Qalacaq əbədi nə şey dünyada,
Öyrən günlərini vermədən bada.
Kim öz-özünü düşmüşdür başa,
Ona ölüm yoxdur, o ölməz haşaş.

Вникни, мудрый, в суть растений, почвы и камней,
Вникни в суть существ разумных, в суть природы всей, –
И в любом живом творенье можешь ты открыть
Главное, что и по смерти вечно будет жить.
Все умрет, все сгубит время, прахом истребя,
Вечно будет жить познавший самого себя.

Великий поэт, считающий, что тайна бессмертия человека заключается в обучении и исследовании, видит тайну познания человеком самого себя в изучении материального мира. Считаю, что этот призыв Низами актуален не только сегодня, он будет актуален всегда, до тех пор, пока существует само человечество.

Одно из произведений гениального Низами называется «Сокровищница тайн». Несомненно, самой большой сокровищницей тайн является само Бытие, и наука, применяя различные методы, старается раскрыть и понять тайны этой действительности. Ученые, стремящиеся раскрыть тайну действительности на различных уровнях, являются путниками, которые разыскивают сокровищницу тайн бесконечной Вселенной. В этом смысле Национальную академию наук Азербайджана, являющуюся храмом фундаментальных и прикладных наук, можно метафорически назвать сокровищницей тайн. Если благодаря своему редкому поэтическому мышлению Низами Гянджеви смог поэтически проникнуть в сокрытые тайны действительности, то самая высшая стратегическая цель Академии наук заключается в обнаружении научных истин и направлении их на благополучие людей.

Хочу обратить ваше внимание еще на одно обстоятельство. По непосредственной инициативе президента НАНА, многоуважаемого академика Рамиза Мехтиева в этом году было принято постановление о разработке «Национальной стратегии устойчивого развития науки в Азербайджане в 2022-2030 гг.». Подготовку стратегии обусловили создавшиеся в регионе новые реалии. Так, Азербайджан, одержав блистательную победу в 44-дневной Отечественной войне и полностью восстановив свою территориальную целостность, создав новые реалии и тем самым завоевав большой авторитет в регионе и мире, в настоящее время вступил на качественно новый этап своего развития и превратился в основной фактор при определении геополитической и экономической архитектуры региона. Вследствие этого возникла необходимость в определении новой линии стратегического развития и национальных приоритетов государства. В том, что подготовка «Национальной стратегии устойчивого развития науки в Азербайджане» совпала с «Годом Низами Гянджеви», который восклицал: «Сила в науке, иначе никто другой не может рассчиты-

вать на превосходство», кроется особый смысл. В этот знаменательный год мы должны определить перспективы развития и приоритеты азербайджанской науки во имя ее дальнейшего устойчивого развития.

Низами является одной из редких личностей, которые появились в ходе цивилизационного развития человечества, он не только всегда современен, для всех времен Низами является и поэтом-новатором, и будущим. Несмотря на то, что после его смерти прошло более восьми веков, мы говорим о Низами не в прошедшем, а в будущем времени. По мере того, как время проходит в физическом смысле, мы духовно приближаемся к его идеалам. Принадлежность этой сокровищницы азербайджанскому народу вызывает чувство большой гордости и чести.

**AT THE VIII CONFERENCE "PHYSICS AND
LYRICS" ON
"MATHEMATICAL-ASTRONOMICAL VIEW IN
NIZAMI GANJAVI'S WORKS " AT THE SHAMAKHY
ASTROPHYSICAL OBSERVATORY NAMED AFTER
NASRADDIN TUSI**

*Rasim ALIGULIYEV**

Vice-President of ANAS, General director of Institute of Information Technology, Academician

Dear conference participants!

This year's concept of the Conference "Physics and Lyrics", dedicated to the 880th anniversary of the great Azerbaijani poet Nizami Ganjavi is the mathematical and astronomical views in the works of Nizami Ganjavi. As known, by the Decree of the President of the Republic of Azerbaijan Mr. Ilham Aliyev dated January 5, 2021, this year was declared the "Year of Nizami" in commemoration of the 880th anniversary of the prominent Azerbaijani poet Nizami Ganjavi. The Decree of President Ilham Aliyev serves, on the one hand, the protection, study, and promotion of our national and spiritual values, our classical literary heritage, and, on the other hand, the promotion of the Azerbaijani people's challenges for peace, justice, and humanity in the world about thousand years ago.

Undoubtedly, Nizami Ganjavi's ideas are of great importance in the current stage of development of independent Azerbaijan, especially in the development of the Azerbaijani ideology and the formation of a new generation in the spirit of national and moral values in the context of the enthusiasm mainly after the great victory in the 44-day Second Karabakh War. Also, in the framework of the contemporary challenges and theoretical and methodological capabilities, we need for a comprehensive and in-depth study of the great heritage of Nizami Ganjavi, as well as his knowledge of nature, society, and science by our scientists. An Action Plan has been developed at the Azerbaijan National Academy of Sciences for the implementation of the tasks arising from the above-mentioned Decree, including the multidisciplinary study of the great Nizami's heritage, and instructions have

* E-mail: r.alguliev@gmail.com

been given in relevant scientific fields. This Action Plan has set several important tasks for both the humanitarian and social sciences and other sciences. At the same time, other important events are being held in our country and abroad within the content of the "Year of Nizami".

Thus, a few years ago, the Nizami Ganjavi Scientific Center of Azerbaijan and Caucasian Studies was established at Oxford University on the initiative of the Vice-President of ANAS, Rector of Baku Branch Lomonosov MSU, Academician Nargiz Pashayeva, and Professor of Oriental Studies Faculty at Oxford University Robert Hoyland. By the way, I should mention that the establishment of this center at Oxford University, where the world's most influential scientists and specialists work, and also the significant works done there, play an important role to accept Nizami Ganjavi as an Azerbaijani poet by the international community, scientists, and experts. Generally, due to the recent work carried out under the leadership of President Ilham Aliyev, both in our country and in the international arena, Nizami Ganjavi is already presented to the world as an Azerbaijani thinker and value. No coincidence that the "Gold Medal of the Republic of Azerbaijan named after Nizami Ganjavi" was established in 2014 by the order of the President for fundamental and applied scientific results, discoveries, inventions, as well as special services in the development of science.

One of the most prestigious events dedicated to Nizami Ganjavi was recently held at the State Hermitage Museum in St. Petersburg. At the ceremony dedicated to the 880th anniversary of Nizami Ganjavi, the director of the Hermitage Museum, academician Mikhail Piotrovsky gave detailed information about the creativity of Nizami Ganjavi, miniatures prepared on the themes of his works. One of the most important features of this event is that still in 1941, in the period of the Great Patriotic War, during the siege of Leningrad, Nizami's 800th anniversary was celebrated in the Hermitage. Undoubtedly, the remembrance of Nizami at this level in the scientific and cultural centers of the world, the analysis of his works give us a great sense of pride as a citizen. Because Nizami Ganjavi is a cultural and spiritual treasure not only for Azerbaijan, the Turkish and Muslim world but also for the whole world.

Today, the Azerbaijan National Academy of Sciences conducts extensive research to study the life, work, and philosophical views of Nizami Ganjavi, and a series of events are organized. The books, papers, and works published this year, the work done both inside and outside the country, as well as the events planned to be implemented by the end of the year, show that the tasks set for the Azerbaijan National Academy of Sciences are carried out with great responsibility and consistency. Currently, Nizami Ganjavi's heritage is studied at the Academy of Sciences not only from an artistic and philosophical point of view but also as an encyclopedic source that reflects the extensive knowledge of the

period as a whole. Because the creativity of genius Nizami Ganjavi in figurative meaning was the university and academy of his time. When we look through the formation history of scientific thinking in Azerbaijan, undoubtedly, Nizami Ganjavi, Nasreddin Tusi, and other thinkers will be among the first to come to our attention. The role of these prominent figures and personalities in the formation of national intellectual thinking throughout history is very great.

Preliminary investigations show that Nizami's works are a crypto world whose secrets have not yet been fully revealed. So, from this point of view, the analysis of Nizami's works by new researchers in the context of modern scientific, technological innovations and opportunities, theoretical and methodological approaches promise to achieve very interesting and important results.

As known, the XXI century is characterized by the development of exact sciences, technologies, the progress of fundamental sciences. Just in this context, to pay attention to Nizami Ganjavi's creativity, to analyze his works, to promote his ideas and challenges is very important. From this point of view, the re-examination of Nizami Ganjavi's works in various contexts, whether within the context of astronomy, mathematics, or other exact sciences, I think, will lead to fascinating conclusions.

In this regard, the Conference "Physics and Lyrics" is significant. Dedicating the 8th Conference to Nizami Ganjavi's creativity, especially from the point of view of exact sciences, is a very correct approach. Therefore, I appreciate the research in this field and I am grateful to the staff of the Shamakhi Astrophysics Observatory for hosting the Conference. And I wish success to the work of the Conference!

**AT THE VIII CONFERENCE "PHYSICS AND
LYRICS" ON
"MATHEMATICAL-ASTRONOMICAL VIEW IN
NIZAMI GANJAVI'S WORKS "
AT THE SHAMAKHY ASTROPHYSICAL
OBSERVATORY NAMED AFTER NASRADDIN TUSI**

*Namig DZHALILOV**

*Corresponding member of ANAS , General Director Shamakhy Astrophysical Observatory
named after Nasraddin Tusi*

Dear teacher Isa! Dear participants of the event!

On behalf of Azerbaijani astronomers, I greet you with deep respect. The relations between the Institute of Literature named after Nizami Ganjavi of ANAS and Shamakhy Astrophysics Observatory named after Nasreddin Tusi are expanding. The main reason for this is a series of events called "Physics and Lyrics", which was held on the direct initiative and idea of academician Isa Habibbayli.

Unfortunately, events have been suspended for some time due to the Covid-19 coronavirus pandemic, which is raging around the world. Before the pandemic, with this initiative, we visited the famous Center for Nuclear Research in Dubna, Russia. Today, the reunion of the two scientific institutions at the conference "Mathematical and astronomical views in the works of Nizami Ganjavi" from the series "Physics and Lyrics" is both a delightful and a significant event.

The announcement of the current year by the President of the Republic of Azerbaijan, Mr. Ilham Aliyev, as the "Year of Nizami Ganjavi" is considered as a call to mobilize Azerbaijani intellectuals and researchers to study the work of the world-famous writer in more depth. Each work of the poet, whose creativity is an inexhaustible treasure, is rich in scientific knowledge. For this reason, experts call him a scientist-poet, thinker and philosopher. As the sultan of the art of speech, he skillfully achieved the description of scientific knowledge in poetry and opened a new bright page in the history of world poetry

* E-mail: namigd@mail.ru

Nizami's work, which had a significant impact on the development of Azerbaijani and world literature, occupies a worthy place among the unique pearls of world literature, even after centuries. The literature of the peoples of the Caucasus and the Middle East has long been influenced by the artistic heritage of this great poet, and prominent writers have benefited from Nizami's "Khamsa", which stands at the pinnacle of world poetic and philosophical thought, and have learned the art of poetry. The poet-thinker laid the foundation of a large literary school consisting of many followers. His works, which adorn the most famous libraries and museums, gave an important impetus to the development of Oriental miniature art.

It is an undeniable fact that a master with a deep encyclopedic knowledge finds a synthesis of different sciences in the works of the poet. From this point of view, Nizami, distinguished by his humanism and humanity, is of great value in the world. He is one of the rare figures in the history of civilization, whose appreciation and respect for his work knows no national, racial, religious or geographical boundaries.

It is no coincidence that Nizami Ganjavi is also considered a "poet of all times and peoples." His knowledge of many languages, his careful reading and study of the works of world-famous scientists, led him to perpetuate his scientific knowledge in the fields of history, astronomy, geometry, physics, chemistry, logic, philosophy, theology and other fields through the language of poetry.

The fact that Nizami Ganjavi's poetry is rich in information, mainly in mathematics and astronomy, testifies to his wide philosophical views and deep knowledge of the structure of the surrounding world. The scientific facts mentioned in the works of the poet, who has a perfect understanding of the Qur'an, resonate today, and the vast majority of them have been confirmed in surface and space experiments. There is a great need for fundamental research of Nizami's works not only by literary critics, historians and linguists, but also by specialists in the exact sciences. One of the important issues is the translation and publication of national and foreign legal materials, which reveal the exact facts about the life and work of the great master of words, in foreign languages. By properly fulfilling these tasks facing our scientists, we can prevent the spread of false claims about the life and work of the poet, and present Nizami to the world scientific community as he is.

Although very important achievements have been made since the beginning of the last century in the study of Nizami's legacy, especially in the formation of Nizami as an important branch of oriental studies, there are certain problems. Foreign media and separate publications still make baseless allegations about the nationality of the great Azerbaijani poet Nizami Ganjavi and his place of birth. Some authors make various absurd claims about the poet's biography, environ-

ment and creativity, without relying on the original source or interpreting the sources as they wish. These biased researchers are still repeating unsubstantiated assumptions based on no facts that were refuted by influential national and foreign scholars in the 1940s.

I would also like to note that in Nizami's works it is possible to find perfect ideas on astronomy and physics, such as natural sciences, mathematics, philosophy, geometry, theology, medicine, ethics and others. Some of them are given more space and embody the author's level of knowledge in this area. From this point of view, the fact that in the works of the great poet the knowledge of astrophysics, which was called "almşūnas-naturalist?" at that time, was given a wider place, is also an indication of his sympathy for this field. Nizami calls all celestial bodies "revolving domes". Unlike in modern times, it was impossible to obtain any accurate information about celestial bodies because of the lack of electronic devices at that time. Nevertheless, the master of the art of speech was able to determine by visual observations that they were spherical rotating objects. In his works, the poet skillfully uses astronomical tables to determine the motion of celestial bodies and their time-dependent position, and angular measuring devices to determine coordinates, often using various astronomical expressions to express his thoughts or describe the images he creates.

In his works, Nizami, like other different fields, amazes the reader by mastering his deep knowledge of the subtleties of astronomy. He instills the issues of astronomy with his fascinating verses, created with high artistic taste. As a scientist-poet, the genius master skillfully speaks about the greatness of the universe and the order and harmony of these wonders in it. Nizami's love for the stars and the sky is evident in his work. The poet's special interest in astrophysics is more evident in his "Iskandername". The protagonist is interested in the essence, creation, origin and development of the material world and the whole universe. In order to achieve scientific truth in this field, Alexander organized a scientific meeting with the participation of seven philosophers, whom he trusted. The meeting discusses the concept of central gravity, the circular motion of celestial bodies, and other such issues.

Dear conference participants! Much has been done in our country at various times to study and promote Nizami's art, which has always been the focus of world oriental studies, especially after the restoration of our independence, and his books have been republished in the Azerbaijani alphabet. However, as we have noted, the life and work of the great Nizami, who enriched the Eastern artistic thought with scientific and philosophical ideas, must be studied in depth and appreciated. The study and promotion of the legacy of the genius master of words, one of the rare personalities who has opened a new page in the annals of human artistic thought, is one of the main tasks facing our scientists and specialists. It

is also important to pass on the works of the great poet, scientific monographs in this field, as well as all the valuable information about Nizami to future generations. I wish each of you success in fulfilling these honorable tasks. Thank you for your attention!

A MODERN SCIENTIFIC VIEW ON THE STUDY OF NIZAMI GANJAVI'S CREATIVITY

*Adalat ATAI**

Head of Department Planet and small celestial bodies of ShAO ANAS, PhD, associate professor

The plots and themes of Nizami Ganjavi, who is considered to have the deepest knowledge of his time, were studied by world-renowned thinkers and used to make the essence of their works more meaningful. For example, the genius Leo Tolstoy, who read Nizami's works from the original Persian, benefited from Nizami's treasury in his War and Peace. It is clear that Mirza Kazim bey, who spoke to L. Tolstoy about Nizami's greatness, also taught him Persian. It was in this language that Leo Tolstoy realized that Nizami was a genius and that the Azerbaijani people had scientific and cultural values Nizami wrote in "Seven beauties":

Dünyada nə qədər kitab var belə

Çalışıb əlləşib gətirdim ələ

Ərəbcə, dəricə yeri düşərkən,

Buxari, Təbəri əsərlərindən...,[1]

The poet emphasizes that he strives for deep knowledge and also learns Dari. Dari language (dari دری is the language of Tajiks, Hazaras, provinces and other ethnic groups living in Afghanistan and is one of the languages of Iran. The Constitution of Afghanistan also stipulates that one of the two official languages of Afghanistan is Pashto.

It is clear that Persian cannot be the poet's mother tongue in this way. On the other hand, the idea that Ganja was a city of Iran in the 12th century is wrong. How could Ganja be an Iranian city where Iran itself was part of the Seljuk Empire during Nizami's time? Ganja was also the capital of the Azerbaijani Atabeys,

* E-mail: atai1951@yahoo.com

who were Turks. Hence, the stubbornness of the Persian chauvinists is also inappropriate.

Then, in "Seven Beauties", the poet is ready to write his thoughts:

İzlədim yolunu səyyarələrin,
Nə ki, elmlər var, gizli və dərin,
Oxudum xəbərdar oldum da vardım,
Varlıqlar sirrini yer-yer axtardım.
Əlimə yetişən hər bir varaqdan
Nüsxələr bağladım mən zaman-zaman.
Onda ki, fikrimi saldım səhməna,
Dedim ki, qoy onu düzüm dastana.

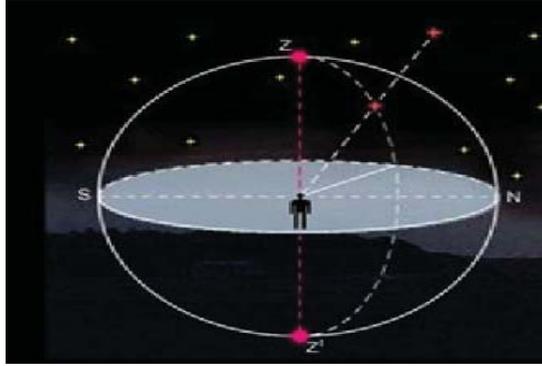
Nizami shows that he wrote his works after studying the works of Bukhari Samarkandi and Abu Jafar Tabari, after mastering the secrets of science by observing the movements of stars and planets in the sky. In "Leyli and Majnun", he notes that he tries to get a detailed description of the world around him and information about the world, and is concerned about the lack of knowledge in this area:

Göyün sirr pərdəsi ki, bərqərarlıdır,
Gözlə görünməyən bir sirri vardır.
Nə qədər oraya at çapsam da mən,
Bir xəbər öyrənmək gəlmir əlimdən.
Göyün lövhəsində yanar rəqəmlər,
O saf ulduzları mən birər-birər
Nə qədər oxuyub öyrəndim, heyhat
Yenə də qəlbimi görmədim rahat.(L.M.)

The celestial sphere is an arbitrarily large-radius sphere with an observer at its center. Celestial bodies are projected onto the inner surface of this sphere, including the Sun, Moon, and planets. The center of the celestial sphere is an arbitrary point. Each observer has his own sphere. The angular measurements on the surface of the sphere do not depend on its radius (Figure). Z - the zenith point is at the top of the observer's head,

Z' - Nadir is on a straight line passing through the zenith and the observer, and is a point on the opposite side of Z. N - North and S - South.

When the poet speaks of a curtain, he imagines the celestial sphere as a hemisphere of equal radius, and shows that even if I ride a horse towards the dome



(or rather, the line connecting the hemisphere to the Earth), I cannot get any information. It remains a mystery. I am also worried about this.

In *The Treasure of Mysteries*, Nizami makes it clear that God created the entire material world "out of a drop of His grace." It is known that no one in the Soviet era would agree with Nizami's opinion. The origin of matter from nothing was unacceptable from the point of view of Soviet science. However, one of the founders of Soviet science, the world-famous scientist YB Zeldovich, said in an interview with the *Izvestia* newspaper in 1986, shortly before his death:

"Although it may seem paradoxical, my considerations and calculations have led me to the conclusion that the matter of the universe came into being out of nothing."

Nizami, who does not believe in superstition, looks at the issue of doomsday from a scientific point of view and thinks that one day the celestial bodies will end, their current order will collapse, and the current stability between the Sun, Moon, Earth and other planets will be disrupted. That is, the existing stability is relative, there is no absolute stability. Modern science calls such an event quasi-stable. It is necessary to talk about a fact that confirms Nizami's opinion. The moon creates a 50 cm amplitude on the Earth's surface.

The Earth's own axis of rotation is 30 times the speed of the Moon's rotation around the Earth. Thus, the Moon reduces the speed of the Earth. Such a delay in the lunar-Earth system leads to an increase in the period of the Earth's rotation (lengthening of the day) and the Moon's distance from the Earth.

Calculations show that a billion years ago, the Earth's rotation period was 20 hours (20 hours a day). The distance to the Moon is measured by laser beams for about half a century. It has been determined that the Moon moves 3 cm away from the Earth every year, and in 5 billion years the period of the Earth's rotation will increase 41 times to about 1,000 hours. In fact, there will be nine nights and nine daylights a year on Earth. Today's views on the association and evolution of celestial bodies in modern astrophysics are consistent with Nizami's.

The analysis of such views is interesting [3]. N. Ganjavi is interested in the formation and development of the universe and its current state, as well as the issue of its catastrophic collapse. He also wonders if there are Earth-like objects in the universe. That is, he understood the unity of the world.

Nizami's works contain a lot of information about the ancient way of life and customs of the peoples of Iran, the Middle East and Azerbaijan. He can be considered an ethnographer, a geographer, in the modern sense of the word. Describing Mahin Banu's way of life in "Khosrov and Shirin", the poet says that what has not changed, in modern scientific terms, must evolve:

Fələklərin sürətlə sıçrayışla hərlənməsindən,
Necə, bəla gələcək Yerin başına, biləsən.
Göydə yanan, partlayan, batıb gedən hər nə var,
Yer üçün bir nümunə, bir timsaldı apaşkar.

The study of the works of such a genius thinker, who sees the distant future in his thoughts and understands the process of evolution, needs to be filtered by experienced, natural scientists who have mastered modern science.

In the modern conditions of rapid development of science, to add the results of 400-500 years later in the works of Nizami Ganjavi should not be considered as respect for our great poet. For example, the idea that the planet Saturn has a ring is also wrong to attribute to the great poet. This was not enough, while the other described Saturn, saying that it did indeed hang from his waist, that is, that it had the "belt" now known. One small mistake in the translation created two misconceptions. Maybe such confusion was released during the translation from ancient Persian? Here it is necessary to know the opinion of experts. But the question arises: could Nizami Ganjavi see the rings of Saturn? In 1607, it was able to magnify glass in the form of the intersection of two circles. Such glasses are called "lens" in German and "merci" in Azerbaijani.

In 1609, Galileo built the first telescope with a magnification of thirty times, and said that the Moon consisted of the mountains, the phases of Venus, the four large satellites of Jupiter, spots on the disk of the Sun, and the Milky Way star clusters at the equator of our galaxy.

When Galileo called his mother and showed him Jupiter's satellites with a telescope, he replied, "I've seen them since I was a girl, and you see them with your glasses." But Galileo could not see Saturn's rings with a telescope 30 times magnified. He thought that because Saturn was spinning so fast, there was a slight protrusion in the equator. This means that no one could see Saturn's rings with a telescope with a magnification of 30 times. In 1656, with the help of a 50-magnitude refractor (lens) telescope designed by the famous musicologist H.



Huygens, he announced to the scientific community that there was a ring around Saturn with remarkable beauty. Galileo could not see the rings of Saturn (He died in 1642).

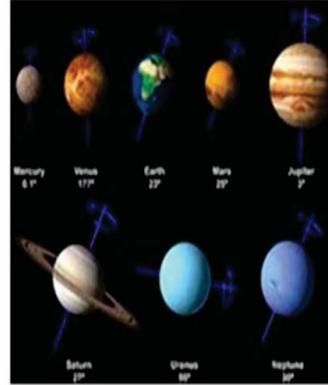
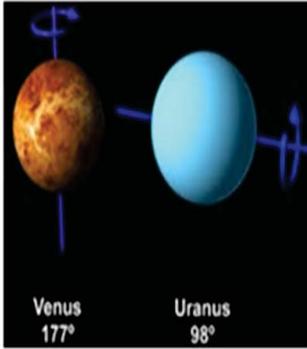
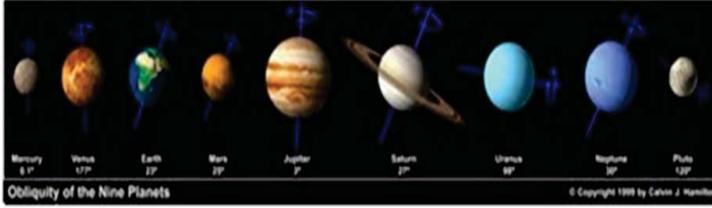
So Nizami could not distinguish Saturn from the star. Although many noted the inaccuracy of Ptolemy's teaching, Biruni explained the first step in detail. Omar Khayyam linked the centralization of the Earth as the biggest flaw in Ptolemy's teaching.

Omar Khayyam considered Biruni's opinion to be the biggest step in this direction.

For example, [3, 4], Nizami writes in a note about himself: "In a short time I learned all the sciences between Saturn's circle and the center of the Earth and became aware of all the sciences." (How can this sentence be understood?) they give. However, Nizami uses an interesting expression in the same note, not "Earth", but "Earth's center". This confirms that the Earth is spherical. Of course, in this example, since space is a cosmic space, logically, the concept of "center" is not plane (as in ancient simple notions), it must be spherical. This expression also shows Nizami's interest in geology, geophysics and natural sciences. Such an approach to Nizami's work is unacceptable. Misunderstanding of a simple truth has led to big mistakes.

It is clear that in Nizami's time, the last planet was Saturn, and the phrase "I have knowledge up to Saturn's circumference" is taken from the center of the

Earth, and it is correct to have knowledge within Saturn's circumference. What



is not pleasant is that young graduate students and doctoral students also use these writings of well-known researchers and spread such mistakes without thinking. Therefore, when writing an article about Nizami Ganjavi, it is necessary to correctly translate his works from the original, and when commenting on his views, it would be useful to know the opinion of natural scientists. It would be meaningful to complete N. Ganjavi's article with optimistic thoughts on the way to study the universe:

Anlayıb, düşünək hər şeyi gərək,
 Hər sirri açmaqla hünər göstərək.
 Yərləri, göyləri öyrənək bir-bir,
 Qalmasın bizimçin açılmamış sirr.
 Görək, kim yaratmış bu təbiəti,
 O kimdir, işinin nədir hikməti?
 Bu vərəq üstündə çəkilən hər xətt
 Sənətkar əliylə yaranmış, əlbət.
 Qurğusu düz olan bu şeylər bir-bir
 Mahir bir ustada canlı şahiddir.
 Səni, öz adıyla düz yol göstərən
 O böyük allaha and verirəm mən,

Hələ açılmamış elm ilə göylər,
Lakin hər elm də gülür bir səhər.
Bir qara pül olsun, bir arpa əgər,
Onda dörd gövhərdən tapılar əsər.

REFERENCES

1. Tajiks 15-18 m; Hazaras 3-3.5 m; Regions 3.5-4 m
2. "The Afghans - Language Use". United States: Center for Applied Linguistics (CAL). June 30, 2002. Archived from the original on May 4, 2011. Date of use: 24 October 2010
3. H.B. Abdullayev, M . Vəliyev, Nizami Ganjavi's world of science. Baku-Azerneshr-1991
4. Timuchin Efendiyev, prof. "People's" ("Xalq") newspaper.- 2012.- April 7.- P. 5

NIZAMI GANJAVI IN THE RESEARCH OF ARABIC SCIENTISTS

*Imamverdi HAMIDOV**

Head of the Department of the ancient period of the Azerbaijan literature of ANAS, Doctor of sciences on philology, professor

The deep social content of the works of the great Azerbaijani poet Nizami Ganjavi, his humanistic ideas and the richness of the expression of the artistic word have always retained their value for all times. This creativity had a significant impact on the artistic and social thought of the East (7,5). The study of Nizami's legacy in Arabic literature was especially productive in the twentieth century. In the second half of the century, the universities of Cairo, Baghdad, Damascus and Beirut became more interested in studying the rich literary and artistic heritage of the peoples involved in the development of Islamic culture, and began to study Persian and Turkic literary classics. Specialists of these universities were sent to the centers of oriental studies in European countries, as well as to Iran and Turkey and continued their research under the guidance of well-known scientists. Teachers of Cairo and Ein Shams Universities Abdunnueym Hassanein, Mohammad Quneimi Hilal, Mohammad Badi Juma, Mohammad Said Jamaladdin, Ahmed Mirsi Safsafi, and Victor al-Keyk, who represents the University of Lebanon, are among the scholars who have passed this way.

The interest in the study of Nizami's legacy in the Arabic world was also influenced by the celebration of the 800th anniversary of Nizami Ganjavi and the 750th anniversary of the poet's death (1953) in 1940. Prof. M. Hassanein (9) chose Nizami's work as a separate research topic and in the researches of prof. M.Q.Hilal (11,5,6), prof. M.S. Jamaladdin, Dr. Taha Nada, prof. M.B. Juma the poet's works were involved in the comparative analysis.

The work of Egyptian scientist prof. M. Hassanein's "Nizami al-Kanjavi poet-fadilati. Asruhu wa biatuhu wa shiruhu" ("Virtue poet Nizami Ganjavi. Period, environment and poetry") was a new event in Arabic criticism of Nizami. In the introduction to the book, which was published in 1954, the dean of the literature faculty of Ein Shams University, prof. Ibrahim Amin Shawaribi appreciates Hassanein's work as follows: Thanks to Hassanein's thought and perseverance,

* E-mail: mamverdi.hamidov@mail.ru

his research on Nizami has made a worthy literary contribution to the library of Arabic literary criticism and a beautiful pearl in Persian literature.

The author provides information about the study of Nizami's legacy, the socio-political situation of his period and environment. He presents the features of the period in two aspects: 1) from the political, social, literary and religious point of view, 2) from the point of view of the poet's connection with the Ganja environment and his family. It is clear from Hassanein's information based on primary sources that Nizami, who grew up in an environment inhabited by strong-willed people, was influenced by the spirit of diligence in the character of the Achaeans and preached non-submission to oppression and tyranny. The spirit of invitation to labor instilled in the poet's works must be understood as the result of that influence.

Hassanein shows that Nizami grew up in the spirit of Islamic religious education and lived around the religious and moral ideas that existed in his time. The poet preferred to be in the world of thoughts, and tried to understand the world of heart and soul as a person who loves God. Indeed, it is clear from Nizami's works that his thoughts have passed through the mind and heart. The poet is based on the cognitive teachings of Islam, but also studies Aristotle. Hassanein rightly called Nizami a "poet of virtue". He describes the great poet and thinker as "a man of strong morals" ("zu xulqin qavimn"), even "a man tolerant of his rivals" ("mutasamihun hatta maa adaihi"), a faithful husband in the family, and a caring father (9,85-95).

The second part of the work "Poet of Virtue Nizami Ganjavi ..." is devoted to the analysis of Nizami's Masnavi and the poetic features. Hasaneyn gave a special place to each of the poems "Khamsa". The Egyptian scholar mostly uses the method of comparison in the analysis of poems. From this point of view can be brought the comparison of the works such as the "Treasure of Secrets with the work "Hadiqatul-Haqaiq" of Sanai, "Khosrov and Shirin", "Seven Beauties", "Iskandar-Nameh" by Firdovsi.

It is clear from the author's conclusions that he considers Nizami's success in the art of poetry as a continuation of the previous tradition, as well as he presents him as the great poet of the talent and ability, wise Muslim thinker and humanist artist. Hassanein tried to show the differences between Nizami and his predecessors. According to his observation, the "Treasure of Secrets", consisting of 20 articles, has a common aim. This aim is to glorify justice, condemn oppression, and call for justice and fidelity among the people. In Hassanein's comparative analysis, it is clear that poetry in Nizami's art is the language of the heart, in which sincere feelings are expressed the poet's speech looks like as a rage full of objection, his mystification connected with sense, and the poet glorified the truth in the poems as a real pious and a human being who perceived the God. As a

result, Nizami's poetic style became more beautiful, perfect and attractive. When Hassanein, who made a comparative analysis of Khosrov's stories with Khosrov and Shirin in Firdovsi's Shahnameh, takes into account the role of the historical conditions in which both works were written, the creative nature and purpose of the authors. According to his observation, Nizami's work on this topic differs from Firdovsi's work on this topic, Nizami is the first poet to present the love of Khosrov and Shirin in the form of a romantic work. In "Khosrov and Shirin", Nizami brought innovation to the subject by creating a new image of Farhad, trying to open the inner world of personalities by increasing the dramatic conflict. The poet describes the heroes not in a dazed state, but in change and action. In the part dedicated to "Seven Beauties" also were analyzed the artistic image of Bahram Gur on the basis of comparative research. While Firdovsi's work features extensive battle scenes, in the "Seven Beauties", along with battle and hunting scenes, features adventures about Bahram's love, other human figures exposing his contradictions and mistakes, and episodes aimed at correcting the ruler. In the work, the poet promotes his ideas aimed at purifying society. Hassanein was able to correctly reveal the different features of Nizami's work. If Firdovsi wanted to attract readers with the fighting skills of Bahram Shah, Nizami added lyrical features to the skills of his hero.

In the part on the poem "Leyli and Majnun" more attention is paid to the presentation of the content of the work in prose. In addition to showing the poet's use of Arabic sources, Hassanein notes that Nizami also exaggerated the qualities that come from his unique style. The poet sang of the call to virtue, strong character, devotion and sorrow. He added to his story episodes from his imagination (Qays's acquaintance with Leyli at school, Leyli's visit to the garden with her qirl-friends, Majnun's visit to his uncle, the story of Majnun and Salam Baghdadi, Leyli's husband's death). According to Hassanein, unlike Arab sources, Nizami did not present Leyli in a negative light. According to the Arab researcher, Nizami likens Majnun's love to Sufi love, and the way to unite lovers is death.

The Egyptian scholar Nizami writes in his last poem that Alexander, presented here, is a just ruler who carried out reforms, defended justice in the countries where he lived, and defended the oppressed. The poet combined truth and myth in the face of Alexander, who was on the path of invitation to God - the path of truth, and created a full-fledged artistic image.

Hassanein speaks about Nizami's divan, the peculiarities of his poetic art, the difficulty of his poetic language (al-iqlab wat-taqid) and shows that these features are related to the depth of the poet's art and refer to various sciences he studied as a highly qualified scholar of his time. In the concluding essence on Nizami Hassanein states that the poet is at the service of humanity by directing his art

to the promotion of high human values, while at the same time looking at events from a broad Islamic perspective as a Muslim, thus creating a literary school with many followers. As a real and without exaggeration thought of Hassanein about the poet Nizami Ganjavi he "is imam of distich art" (9, 482).

In this book, published in 1954, I consider it necessary to comment on the author's regrettable note. Hassanein shows that Nizami was not properly studied in comparison with the masters of Persian language literature such as Firdovsi, Rudaki, Khayyam, Sadi, Hafiz. Unfortunately, in the fiftieth years of the last century, Azerbaijan and Azerbaijani scholars did not have direct contacts with Egypt, so their works did not reach the world's of Nizami studying. Of course, Hassanein was not aware of those studies conducted in Azerbaijan and written mainly in the Azerbaijani language. In the works of M. Rafili, H. Arasli, M. Alizadeh, A.Y. Krinsky, Y.E. Bertels, M. Guluzadeh, the life of the great poet, his surroundings, artistic value of his works, issues of art, as well as problems of Nizami and folklore, the peculiarities of the literary school were studied objectively on the basis of literary facts. In the literary part of the monograph of the Arab scholar, there are together with Y.E. Bertels's "Great Azerbaijani Poet Nizami" and "Historical Essays on Persian Literature" and at the same time, the name of A. Bakikhanov's "Gulustani-Iram" and the second issue (1940) of "Nizami" collection of articles published by the Nizami Jubilee Committee.

According to our observations, in the thoughts of Hassanein Y.E. Bertels' work has an influence about Nizami's surroundings and the role of sciences which were spread at that time (9, 482). At the same time, the Arabic scholar who introduced Nizami as a Persian poet calls Bertels the author of his old age sinner, because of his introducing Nizami as an Azerbaijani poet for ideological reasons. Bertels shows in his work "The Great Azerbaijani Poet Nizami" that though the poet wrote in Persian, he thought in the language of the people to which he belonged the Azerbaijani Turkish. This is proved by the words written by Shirvan Shah Akhsitan in the poem "Leyli and Majnun" after reading the letter sent to the poet. As an Azerbaijani poet, researchers have proved on a scientific basis that Nizami's works have a special place in the rich treasury of Azerbaijani literature. Speaking about the poet's connection with Azerbaijani oral folklore, common Turkish literary monuments and Azerbaijan literary school, he substantiated the opinions of Y. E. Bertels, M.A Rasulzadeh, M. Rafili, H. Arasli, Y. Ripka, R. Aliyev, R. Azade, N. Arasli have already confirmed this conclusion. (4,13,1,7,3,2). For the first time among Arab researchers, Mohammad Quneimi Hilal spoke about Nizami Ganjavi's work in terms of comparative study of literature. He conducted extensive research in the field of comparative literature, and did valuable work on the interaction of literary and aesthetic ideas in the Eastern and Western worlds. The scholar's activity in this field, along with the work "Comparative Literature"

("Al-adabul-mugaranu"), "Sentimental life between apology and Sufism" ("Al-hayatul-atifiyyatu beynal-uzriyyati vas-sufiyyati"), "Selected poems from Persian languaged poems" ("Mukhtaratun minash - shiril-farisiyyi"), "Examples of humanism in comparative literary research" ("An-namazijil insaniyyati fid-dirasatil adabiyyatil - muqaranati").

Hilal correctly appreciates the role of Nizami in his masnavi creativity and writes: Nizami had a special talent and beautiful art in this field, he brought his masnavi poetry to a perfect stage. The Arabic scholar also touches on the poet's views on Sufism and notes that in Nizami's works, the beauty of Islamic Sufism is more pronounced. However, in the poet's heart there are secrets of feelings and attachment to this world. The beauty he describes is related to the divine nature. Highly appreciating Nizami's art and personality, Hilal paid special attention to the poet's poem "Leyli and Majnun" in order to study the essence of apology and Sufi love, which is widespread in Arabic literature, and considered it necessary to pay attention to the sources and additions made by Nizami (11,295).

Badi Muhammad Juma, a professor at Cairo's Ein Shams University, praises Nizami's legacy in his book "A Beneficial patterns of Persian Literature" ("Min Ravaiil-Adabil-Farsiyyi"), along with translations of the poet's works into Arabic. Juma shows that Nizami has risen to a position that no poet can reach in Persian speaking literature. He says that the great poet has achieved unprecedented success in the field of romantic poetry. Regarding the poem "Khosrov and Shirin", the Arab scholar notes that as a result of Nizami's great success in writing this work, the famous poets who came after him created many works on this subject. Their The authors either continued the style of Nizami, or tried to enrich the known plot or to make some changes (6,237,240).

Arabic scholars studying Nizami's legacy have put forward interesting and noteworthy ideas about the poet's poem "Leyli and Majnun". The sources of the story, the essence of the love presented here, the additions and changes to the main subject, the considerations made in the world of images show that the study of Nizami's legacy is taken seriously. As it is known, the main sources on the subject of the story of Leyli and Majnun are Ibn Gutayba's "Poems and Poets", Abul-Faraj al-Isfahani's "Book of Songs" and Abu Bakr al-Walibi's "News about Majnun and his poems". It has become clear from our research that Walibi's work should be considered more authoritative because it is based on the story of the poet Qays ibn al-Mulawwah, nicknamed Majnun, and was historically compiled before Isfahani's book.

Professor Mohammad Said Jamaladdin praised the role of humanist Nizami in the development of epic poetry, noting that Nizami created a great innovation in the art of epic poetry. At the result some famous poets imitated following him, and they tried to write "Leyli and Majnun" and other works (5, 250-272).

The Arabic researchers studying the legacy of Nizami Ganjavi have given much space to descriptiveness in the comparative study of the topics addressed by the great Azerbaijani poet, especially the story of Leyli and Majnun. The main of their research is the removal of Nizami Ganjavi from the 12th century Azerbaijani school of poetry. In addition to studying Nizami's legacy, the Arabic researchers have translated his works and patterns of his works into Arabic. Mohammad Quneini Hilal, Abduneyim Hassanein, Mohammad Badi Juma, Mohammad Said Jamaladdin's translations from "Khosrov and Shirin", "Leyli and Majnun", "Seven beauties" and "Isgendernameh" acquainted Arab readers with the art of the great poet, play an important role.

The Center for Persian Language and Literature at the University of Lebanon and its head, professor Victor al-Kik, should also be noted for promoting Nizami Ganjavi's legacy in the Arabic world. In a special issue of Nizami Ganjavi, the Center's "Literary Studies" ("Ad-dirasatul-adabiyatu") magazine, published in 2004, Nizami scholars, as well as articles by Victor al-Kik and Dr. Dallal Abbas on various aspects of Nizami's life and work, were translated into Arabic shows a strong interest in the study of the poet's literary heritage in their countries.

REFERENCES

1. Arasli H. Nizami and Azerbaijan folk literature - Nizami Ganjavi (collection of articles), book II, Azerneshr, Baku 1940
2. Arasli N. Poetics of Nizami. Baku 2007
3. Azade R. Ways of development of Azerbaijan epic poems. XV-XVII centuries, Baku 1975
4. Bertels Y. E. İzbrannie trudi. Nizami i Fuzuli. Moscow 1962 (in Russian)
5. Jamaladdin M.S. Al-adabul-mugarani. Cairo 1996 (in Arabic)
6. Juma'a B. M. Min ravaiil - adabil - muqarani. Cairo 1996 (in Arabic)
7. Aliyev R. Nizami. Short bibliographic information. Baku 1982
8. Aliyev G. Nizami themes and plots in the literature of Eastern peoples. Moscow, 1985 (in Russian)
9. Hassanein A.M. Nizami al-Kanjavi shairul-fadilati. Asruhu and beyatuhu va siruhu. Cairo 1954 (in Arabic)
10. Hilal M. G. Mukhtaratun minash - shiril farsiiyin. Cairo 1965 (in Arabic)
11. Hilal M. Q. Al-hayatul-atifiyyatu beynal-uzriyati vas-sufiyyati Cairo 1976 (in Arabic)

12. Mammadaliyev V. Nizami in Arabic literary criticism - "Nizami and Oriental literature" collection. Baku 1983
13. Rasulzadeh M.A. Azerbaijani poet Nizami. Baku 1991
14. "Nizami Ganjavi" (collection of articles), II book, Baku 1940
15. "Nizami Ganjavi" (collection of articles), IV book. Baku 1947

SCIENTIFIC AND LITERARY REFLECTION OF THE SEASONS IN THE WORKS OF NIZAMI GANJAVI

*Tahira MAMMED**

Head of Department of Theory of Literature of ANAS , Doctor of Philology, professor

Nizami Ganjavi demonstrates great skill in describing seasonal changes and also shows a deep knowledge of the scientific data of his time related to astronomy. His creativity is rich in beautiful literary examples of classical Eastern literature like Bahariyyas (versifying spring) and Khazaniyyas (versifying autumn), as well as poems describing summer and winter. In the poet's poetry, seasonal changes is presented as a movement that reflects the beauty, harmony, order, and balance of human-nature-space-God relationships in the Universe.

In his poem called "Description of Barda" the beauty of the city is being described in the background of different seasons:

How beautiful and stylish Barda is,
Flowers are all around both in spring and winter.
Tulips are spread all over the mountains in July,
And the breeze of spring warms winter up. (4, 201)

The poet trying to revive the mental state of his hero and the events with a lyrical mood, establishes a poetic connection between nature and man and creates beautiful pictures. One of such scenes is a khazaniyya presented in "Leyli and Majnun" as a setting for the scene of Leyli's death. The poet displays Leyli's death not in severe and cold winter, but in fall, when the colors acquire new vitality, reminiscent of pre-death beauty. In the "Arrival of autumn and Leyli's death" part of the work, autumn is like Leyli, and Leyli resembles fall. Nizami describes autumn, the transition from the last diversity of nature to winter, with its visible and invisible sides as follows:

As a rule, when the leaves fall,
Bloody waters flow from these leaves.
There is blood in every branch,

* E-mail: tahire.mammed@yahoo.com

Drops are dripping from the holes ... (5, 245)

The same mood is observed in Leyli revealing her secret to her mother in her last breath:

I'm on the way. . . . what can I do now?
 Don't hold me back , for I'm on the move.
 I'm in blood, you say kindness?
 I'm dying, you say living?
 What tortures I secretly coped with, mother!
 Now my heart is overflowing with sorrow. (5, 247)

The poet is trying to revive a different state of mind and the connection observed between the Creator and the creations in each season with the power of poetic expression. For the poet, spring is a moment of beauty and harmony that the Sun longs for and brings perfection with enhanced light. Nizami Ganjavi describes the arrival of spring as the awakening of nature and the human spirit, and he notes that it has been celebrated with rituals since ancient times:

In Novruz and Satta holidays,
 Rituals were restored.
 Brides and girls
 Leave their houses happily.
 Hands in henna, faces beautified
 Coming from everywhere enthusiastically
 The wine is in front and cheeks are red like tulip
 Hitting goblets face to face with Mughal
 From spells of fire
 The sky is full of smoke. (4, 171)

Nizami Ganjavi, who prefers the religious views and Islamic worldview of his time, is critical of the ceremonies celebrated by fire-worshippers, and respects Alexander's abolition of the Mughal rites: Wise Alexander had issued a decree:
 -Let the rite of the Mughals eliminate. (4, 172)

Although he presents it on the basis of comparing religious beliefs, Nizami conveys detailed information in poetic language about the ancient history and ways of fulfilling the traditions in which the people lived..

Nizami explains the changes of seasons and years with the astronomical mobility in zodiac. At this point, the poet relies on scientific findings formed from both ancient Chinese and Babylonian-Greco-Roman sources; he associates the change

of seasons with the periodic movement of the constellations, stars, and planets. The poet, who pays special attention to Novruz in the change of seasons, explains the change of months and constellations towards Novruz. Nizami Ganjavi reflects the changes in the constellations, as well as in nature with great artistry and scientific awareness. While describing the ascension of the Prophet Muhammad (pbuh) in the "Treasure of Mysteries", even the description of the constellations is arranged towards spring, Novruz.

Look where does good news of heavenly journey come from
 From the star sign of Cancer!
 Capricorn shone and created a cluster of light,
 He took the "Thorn" and threw it to the Leo.
 Venus arranging arms of Libra,
 Measured the weight and value of the blessed night.
 The scales prostrated in front of his face,
 His weight is heavier than stone and scales.
 He got up, approached the tail of Scorpio,
 gave him an ointment from the breath of Susanbar.
 Sagittarius shot an arrow from his bow,
 And saved Capricorn from poison.
 From the horoscope of Eunice, who entered the belly of Pisces,
 He passed through Aquarius, and Joseph was born.
 He established the throne in the sign of the Aries,
 Immediately tons of flowers blossomed.
 The flowers and tulips of that garden burned,
 The whole earth was painted the color of spring.
 The night turned into the day. The noon sun is bright,
 Cypresses bloomed. A miraculous spring. (6, 35-36)

Nizami Ganjavi mentions Novruz in three stages. These holidays make up the Novruz system. "One of the ceremonies included in the Novruz system is Sada holiday. Historically, this ceremony was called the holiday of fireworks. Sada means a blazing fire. A. Biruni writes that Sada holiday was celebrated on December 21, not in January. It is known that the belief in fire and the fire worship existed long before Zoroastrianism. From time to time, many holidays and ceremonies related to fire were held in Azerbaijan. Sada was celebrated between the 5th and 10th of Bahman (January 24-29). According to sources, in addition to the Azer and Sada ceremonies, there were several fire-related holidays. " (3)

Biruni's celebration of Sada on December 21 is most likely due to the arrival of winter and the longest night of the year. It is possible that the rites were

performed on the same day. On that day, the sun's entry into Capricorn and the darkness and the prolongation of the night could have led to the rites of fire and rituals to help the sun. The following verse by Nizami also expresses assist the Sun:

Sagittarius shot an arrow from his bow,
 And saved Capricorn from poison.
 Salvation, beauty and festive mood begin with the transition to Aquarius:
 From the horoscope of Eunice, who entered the belly of Pisces,
 He passed through Aquarius, and Joseph was born.

In poems we see that with the transition to Aquarius the foundation for beauty is prepared in nature. In Nizami's works holiday rituals are being described. This increases the likelihood that Nizami Ganjavi showed that the Satta holiday was celebrated in late January and early February, rather than on December 21.

The holidays celebrated in Azerbaijan, the study of rituals performed, and the ongoing ceremonial traditions reinforce the belief that Satta coincides with the end of January and the beginning of February. This is still reflected in the celebration of Little Chilla in many of our regions. The celebration of Khidir Nabi in the first ten days of Little Chilla and the performance of rituals similar to the last Tuesday, Charshanba, at that time can be explained as parallelism to the traditions of the Far and Near East in the people's memory, along with spring preparations.

Today, when we look at the traditional New Year's calendar of the Far East, we see some similarities with Sada. The following countries like Korea, China, Tibet, Mongolia, Vietnam, and Japan celebrate the Lunar New Year in late January and early February with special rituals in accordance with national traditions. (2) In Korea, the Seollal New Year holiday is celebrated on January 28 - February 2, 3 (at the beginning of the new month), and in China, the Lunar Spring Festival is celebrated on February 12 (between the new moon and the waning moon) (1). As you can see, the beginning of the new year in the Far East coincides with our holidays of Little Chilla and Khidir. These holidays, which are now celebrated with rituals in some of our regions, especially in Nakhchivan, were probably held in all regions before. Nizami Ganjavi's mentioning the antiquity of Satta along with Novruz may be connected with the vitality of both holidays in the poet's time.

Nizami describes the arrival of Novruz in two stages, in accordance with the change in the constellations: First, the Sun rises above the Aquarius and enters the Pisces; This is our traditional last Tuesday. The poet characterizes this stage as a month of removing sorrow and dust from faces. At that time, the people are

preparing for spring by cleaning and renewing their houses, yards, and clothes. The second step in the zodiac is the transition of the Sun from Pisces to Aries on March 21. In Hamal's chest, Suraya (that is, a cluster of stars close to the ground) builds a throne, and tons of flowers flows into the plains ...

Although Nizami Ganjavi gives the description of seasons with the changes in the constellations and the advance of the Sun in zodiac based on his knowledge of the ancient world astronomy, he showed originality and high artistic skill in his poetic expression. The innovations brought by the poet to the tradition of artistic and philosophical evaluation of stars, constellations, and planets have strengthened this tradition in Eastern and Western literature later.

REFERENCES

1. What is the Chinese New Year? When is the Chinese New Year celebrated? NTV<https://www.ntv.com.tr/seyahat> Translate this page 11 febr. 2021
2. Kore'de (Seollal) New Year Greetings - KoreZin<https://www.korezin.com>)
3. Khaybar Goyalli-The place of Novruz in the creation of seasons. Azerbaijan newspaper, 01:03 30.03.2015
4. Ganjavi N. Certificate of Honor. Baku: Lider Publishing House, 2004
5. Ganjavi N. Leyli and Majnun. Baku: Lider Publishing House, 2004
6. Ganjavi N. Treasure of Secrets. Baku: Lider Publishing House, 2004

ON NIZAMI GANJAVI'S COSMOLOGICAL OUTLOOK

*Nazim HUSEYNOV**

Leading scientific researcher of ShAO ANAS , PhD, associate professor

Cosmology is a physical structure of the universe as a whole, the science of science studying the causes and evolution. In the wider scope, it studies studies separate stages of the evolution of the universe as a whole.

The distribution of galaxies in the space is being explored in the field of ray-radia-radivacozon to obtain information on the large-scale structure of the universe. To explore the changes in different stages of the universe, the temperature of relic radiation and its spatial features are studied. In addition, various cosmological models are being built for the universe as a whole. Each of these models should take into account the expansion of the universe. Cosmological models are being built on modern features of the space and place (gravity theory), the field of quantum theory, theory of major combination and the theory of elementary particles.

At the same time, the total of all the observed facts of the universe must be taken into account. The known and unknown characteristics of the creation of the universe have always drawn attention of the human race. Despite all the efforts of scholars in this area, it was not possible to make any progress in this direction for a long time .

After the cosmological expansion of the universe in the twentieth century, it was possible to clarify some issues about its evolution.

It should be noted that two views of the universe were existed until the 30^s of the 20th century. Scientific and religious worldview.

According to the scientific world meeting, the universe has been caused by itself from infinitely as a result of the self-natural physical processes. As it does not have a beginning of its creation, there is no end. According to the religious outlook, since certain time, the universe has been created from nothing by the owner of the infinite power, Almighty Allah. As its creation have a beginning, there is an end.

* E-mail: nazimqaramamedli@mail.ru

In 1929, the General Law of Galaxies distancing from each other was put forward by the American scientist Edwin Hubble and right after this, certain progress in this field became possible.

It should be noted that 750-800 years before this event, it was possible to locate certain philosophical ideas on cosmology and the structure of the world in Nizami Ganjavi's works. It is very interesting that these philosophical thoughts are compatible with modern cosmological ideas.

ANALYSIS OF THE WORKS OF NIZAMI GANJAVI AND HIS NATIONAL IDENTITY

In this case, we decided to clarify the issue of Nizami Ganjavi's national identity. For this purpose, pay attention to the part of the language of the work on the text of the Iranian Shah Don Akhsita's Writing "Leyli and Majnun":

This new bride, when works hard,
Ornate it with jewelry by Persian, the Arabic language.
I know the word, you know that,
I quickly choose the new from the old.

Bu təzə gəlinə, çəkəndə zəhmət,
Fars, ərəb diliylə vur ona zinət.
Sözün sərrafiyam, sən ki, bilirsən,
Təzəni köhnədən tez seçirəm mən.

According to logic, if Nizami Ganjavi was Persian or Arabic, then why Akhsita reminds him writing his work in one of these languages. Let's give an example of another part.

Turkish is not useful for our Shah generation,
The Turkish language brings us to the deficiency.
Türk dili yaramaz şah nəslimizə,
Əskiklik gətirər türk dili bizə.

Or in another part of the work, which is a continuation of these verses, the poet is negatively affected by these verses, as follows:

My ear fell into the ring of care.
Blood hit my brain, my lips swelled.
How dare I run away from home.

I did not have eyes, I will open the treasure.

Qulluq halqasına düşdü qulağım.
 Qan vurdu beynimə, əsdi dodağım.
 Nə cürətim vardı ki, evdən qaçam.
 Nə də gözüüm vardı, xəzinə açam.

It is clear that Nizami's nationality is Turkish. Otherwise, Shah Akhsita would not write to Nizami not to compose in Turkish. If the Great Wise Nizami Ganjavi was Persian, then why did he have to write his "Leyli and Majnun" poem in Turkish? Why did the statements about the Turkish language of Axhita, should annoy our great poet? It comes to us so that according to simple logic and judgment, the above-mentioned verses clearly clarify the issue of Nizami Ganjavi's national identity. That is, the issue of Nizami Ganjavi's national identity is not a subject of controversy. Because in the above-mentioned verses, the poet wrote unequivocally he was Turkish. Since this issue is out of our topic, it is sufficient to talk about it. Even if Nizami was not a Turk, why should the humiliation of the Turkish language by the shah have affected him badly?

NIZAMI GANJAVI'S COSMOLOGICAL OUTLOOK

The idea, on the form of the planet Earth on which we dwell was in the form of a globe, , its rotation and movement, was opposite to the views supported by the Roman Catholic Church until the XV-XVI centuries. As it is known, in 1600, Cordano Bruno was burned alive in bonfire because he was preaching Nikolai Copernik's ideas that the Earth was not in the center of the universe and it was moving. At that time, the cosmological dogma, which was accepted by all scholars in the world, was that the Earth was in the center of the world and it was stable. All planets, including the Sun and the Moon, cycle around the Earth. This view was called a geocentric system. He believed that the center of the world was the planet Earth where we live on its surface. This worldview, as a dogma, had been in a dominant position for about 2500-3000 years.

Interestingly, 400 years ago, our genius poet, Nizami Ganjavi, a great thinker and philosopher, wrote in his "Leyli and Majnun":

It is not the only Earth in the form of the globe,
 Every line that rotates, is round, know this.
 Bu kürə şəkliində yalnız yer deyil,
 Hər xətt ki, hərlənir yuvarlaqdır, bil.

Or, in Khosrov and Shirin, Nizami opposes the thoughts of Greek philosophers about the world's center and that it is immovable, and he criticizes these opinions and points out that they are wrong by alluding the fact that the prophet Abraham devastated the idols:

Why is the Earth stable, stars mobile?
 Who said, "Go" to him, "Keep decision"?
 The stars dress the gown and painted color,
 It was as if they were ready for worship,
 Amazement was making me a hundred ways,
 Zunnar, which closes in such a temple,
 But when a surprise is excited,
 The vote came from the obscurity: -Nizami, stop!
 Nə üçün yer sabitdir, ulduzlar səyyar?
 Kim ona "get" dedi, buna "tut qərar"?
 Ulduzlar don geyib rəngə boyanmış,
 Sanki ibadətə hazır dayanmış,
 Heyrət məni yüz yol edirdi vadar,
 Belə bütxanədə bağlayım zünnar,
 Lakin heyrət coşub daşdığı zaman,
 Qeybdən səs gəldi: -Nizami, dayan!

It is clear from these verses, which we show as an example, it is clear that Nizami Ganjavi promoted many progressive cosmological ideas for his time and allotted a place in his works. He put forward valuable ideas related to the fact that the Earth is moving and revolving around its orbit.

The vast majority of people are aware of the World Gravity Law of I. Newton. It is a popular law, played an important role in understanding the world and forming the laws of Physics. As it is known, it was put forward in 1687. Approximately 450 years ago, Nizami Ganjavi displayed that the Earth has Gravity Law in the form of poetry in his works as follows:

Smoke up the rise from this creek,
 Two-Three walks in the wind Ruzgar,
 Then it turns backwards,
 Will fall to the head of the Earth.
 If a cloud is up in the desert,
 Rising up to a certain point.
 Flying to the peak of height,

But again, it does not exceed its limit.
 Tüstü bu dərədən qalxar yuxarı,
 İki-üç cidalıq gəzər ruzgarı,
 Sonra əyilərək geriyə dönər,
 Bu yer kürəsinin başına enər.
 Səhradan bir bulud qalxarsa əgər,
 Ucalar müəyyən nöqtəyə qədər.
 Uçar ucalığın son zirvəsinə,
 Lakin o sərhəddən aşammaz yenə.

It is clear from these verses that as the smoke and the cloud are light, irrespective of the height they rose, the gravity of the earth returns them to the ground. It should be noted that since people did not take into account the gravity of the Earth, they could not fly into space. From this poet, it also clearly seems that the genius poet and great philosopher, in his works, Nizami Ganjavi mentions the form of the Earth as sphere and it is in the movement.

The owner of the Great Wisdom, philosopher, thinker Nizami Ganjavi, thought about how the world (the universe) had been created, and he wanted to clarify these issues in his own way in his works. As you read the works of Nizami, you become sure that Nizami had got acquainted with the work of Greek philosophers. In his works, he also benefited from the worldview of those philosophers and introduced his own opinions about the creation of the world. In some cases, he expressed his thoughts, from the perspective of a number of well-known philosophers.

In the endless universe, is there an orientation?
 Within infinite distance, I wonder if it has dimension.
 Sonsuz Kainatda, mægər bir istiqamətmi var?
 Sonsuz uzaqlıqların, mægər bir ölçüsümü var.

It should be noted that based on modern cosmological models currently available, the principle is that the universe one-of-its-kind and isotropic. In his works, our thinker poet writes that the universe is isotroped, thus it lacks the chosen direction. However, the views on this were put forward in the 1950s. Currently, it is considered that the universe is endless and always expanding. There are several facts of astronomical observations that confirm this. It should be noted that since the universe is expanding, for this moment, it is finite, but its size is endless because it continues to expand. We coincide with the fact that the universe is endless in the piece we brought from the work of our poet.

Let's look at another piece.
 Ask all people right now:
 How was the world created from the gap.
 The heavens with unopened science yet,
 But laughing in every science is a morning
 Those whos are wise when they see a reason
 They understand that the One created that,
 Nizami, walk away from these ideas,
 Do not fall in the trap of this world.
 Bütün insanlara sual ver bu dәм:
 Nә yolla yarandı boşluqdan alәм.
 Hәlә açılmamış elm ilә göylәр,
 Lakin hәр elm дә gülür bir sәhәр.
 Bir sәbәb gördükdә arif olanlar
 Anlar ki, yaratmış onu sәbәbkar,
 Nizami, uzaqlaş bu fikirlәrdән,
 Düşmә bu dünyanın tәlәsinә sән.

Our great poet in the verses we brought as an example above talks about the idea that the universe was created out of nothing. It should be noted that all modern cosmological studies indeed indicate that the universe was created from the gap. It is true that it is opposite to one of the fundamental laws of Physics, which is the law of conservation of energy. Taking into account the complexity of this problem, the poet, in the end, writes "... walk away from these ideas and do not fall in the trap of this world," he concludes. The poet later notes that the solution to this complex issue will be announced depending on the development of science. He calls to deal with science by saying "Laughing in every science is a morning". He promotes the importance of scientific activity. In another work of the poet, he says, "The force is in science, no one else can judge anyone else," There is no need to think about how valuable these ideas are. The poet himself explicitly declares each issue.

Thus, as you peruse works of the Great Duha, Nizami, you cannot become surprised how much a person who had not gone beyond the city of Ganja gained such amount of knowledge. As you read Nizami's works, you see that the analysis of the poet's works has a great need, and indeed, his works have not yet been completely analyzed. You can write a lot about the works of Nizami and there are many words. However, we were able to reflect so much in this small article.

CONCLUSION

1. Nizami Ganjavi openly stated his being Turkish in the work of "Leyli and Majnun".

2. The scientific worldview in Nizami Ganjavi's works is widely promoted. The importance of education and science is promoted in all works of the poet.

3. The worldview of Nizami Ganjavi's on the creation of the universe and the regularities of the universe is compatible with modern cosmological models.

REFERENCES

1. Nizami Ganjavi // Leyli and Majnun // "Yazichi" publishing house, 303 pages, Baku 1982
2. Nizami Ganjavi // Seven beauties // "Leader publishing house", 336 pages, Baku 2004
3. Nizami Ganjavi // Khosrov and Shirin // "Leader Publishing House", 392 pages, Baku 2004
4. Nizami Ganjavi // Iskendername. Iqbalname // "Lider publishing house", 336 pages, Baku 2004
5. A. Azimov, "Universe", Mir Publishing House, 1969
6. Philosophical problems of astronomy of the XX century, Science Publishing House, 1976
7. A. Tursunov, "Philosophy and modern cosmology", Politizdat, 1977
8. "Physics of space, small encyclopedia", Moscow, 1986
9. N.A. Karamammadli (Huseynov N.A.), "Universe", Mammad Araz Publishing House, Baku 2012
10. I.A. Glimishin, "Astronomy of our days", "Science" Publishing House, Moscow 1980

NATURAL (UNIVERSE) PHENOMENA IN THE WORKS OF NIZAMI GANJAVI

*Mirnamig BASHIROV**

Head of Department Analysis and Research of BSU, PhD, associate professor

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:

* E-mail: mbashirov01@mail.ru



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.
Cəzibə 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, qalmadı
 biganə buna.
 Əslən sevməkdimi onun niyyəti? Maqnitə qarşı çatacaqımı hiyyəti.
 Ətrafda nə var zəncirdə ikən, tək sevgisizkən dolaşanda var.
 Qalmayıb 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, Yanlışıq məkanın
 xislətindədir.
 Zaman baş qaldırıb, 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.

REFERENCES

1. Nizami Ganjavi "Iskendername" 1201
2. Nizami Ganjavi "Leyli and Majmun" 1188
3. Nizami Ganjavi "Seven beauties" 1197
4. Nizami Ganjavi "Khosrov and Shirin" 1180
5. Nizami Ganjavi "Treasure of secrets" 1174