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A COMPARATIVE STUDY OF ASTRONOMICAL TERMS IN UZBEK AND ENGLISH

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Abstract: This article compares the general linguistic features of astronomical terms in Uzbek and English. It looks at the role these terms play in expressing scientific concepts, their lexical and semantic characteristics, the degree to which they match in meaning across the two languages, and some of the problems that come up in translation. It also considers why astronomical terms matter for international scientific communication and how they should be used correctly in each language. Drawing on examples, the article shows where the two languages overlap and where they differ, and argues that scientific accuracy must be preserved when astronomical terms are translated.

Keywords: astronomical terms, Uzbek, English, comparative analysis, lexical-semantic features, terminological equivalence, scientific translation.

Introduction:

Science and technology are developing quickly, and knowledge from every field now travels across borders more easily than before. Language sits at the center of this exchange. Expressing scientific information precisely, understanding a concept correctly and passing it on to speakers of other languages all depend largely on how terms are used. In a field as complex as astronomy, terminological accuracy is especially important. Astronomy is the science that studies celestial bodies, their motion, composition and origin, and the phenomena that occur in the universe. It relies on many specialized terms, such as planet, star, galaxy, orbit, comet and eclipse, which let scientists express ideas briefly, precisely and clearly. Because these terms appear in scientific literature all over the world, studying them comparatively across languages becomes a real need.

Uzbek and English belong to different language families, and their grammar and vocabulary differ considerably. Even so, astronomy is an international science, so both languages have many corresponding terms for shared scientific concepts. English planet corresponds to Uzbek "sayyora," star to "yulduz," and galaxy to "galaktika." Still, not every term maps neatly and directly onto its counterpart. Sometimes the meaning, the range of use or the scientific context of a term affects how it can be translated. The topic is relevant because a comparative study of astronomical terms in the two languages can clarify their meanings, improve the quality of scientific translation and reduce the ambiguity that may arise when terms are used.

The aim of the study is to identify the general lexical-semantic features of astronomical terms in Uzbek and English, to show how well they correspond, and to analyze the aspects that matter in translation. The objectives are:

– to clarify the content of the concept of an astronomical term;
– to compare the main astronomical terms used in Uzbek and English;
– to identify similarities and differences in the meaning of the terms;

– to examine the problems that arise when astronomical terms are translated;
– to draw conclusions on ensuring terminological accuracy in scientific communication.

The study uses descriptive, comparative and lexical-semantic methods of analysis. Widely used astronomical terms were selected, and their meanings and scientific usage in Uzbek and English were compared.

THEORETICAL FOUNDATIONS OF ASTRONOMICAL TERMS

A term is a linguistic unit that expresses a specialized concept belonging to a particular science, profession or field of activity. Unlike ordinary words, terms express scientific concepts precisely, make communication between specialists easier and help convey knowledge in a systematic way. Terminology, in turn, refers both to the set of terms belonging to a given field and to the discipline that studies them. Astronomical terminology covers concepts related to celestial bodies, objects in space, astronomical phenomena, methods of observation and physical processes. “Orbit,” “asteroid,” “comet,” “gravitation” and “galaxy,” for instance, are actively used in astronomy and in closely related sciences. Each has a specific scientific meaning, and understanding that meaning correctly is necessary for making sense of astronomical information.

One of the defining features of astronomical terms is their drive toward precision. In a scientific text the meaning of a term should be as clear as possible, and its use should match the scientific concept it stands for. English orbit and Uzbek “orbita,” for example, both denote the path of a celestial body around another body or system. Misreading such a term can distort a reader’s picture of the astronomical process itself. Astronomical terminology is also a developing system. New observations, technologies and discoveries bring new concepts or make the meaning of existing terms more exact. For this reason, studying astronomical terms requires attention not only to their dictionary meaning but also to how they are used in current scientific literature.

The International Astronomical Union (IAU) is one of the major international bodies involved in coordinating astronomical nomenclature and scientific terminology. Shared terminology in international scientific communication helps researchers from different countries discuss the same phenomena and objects accurately.

In Uzbek, the formation and use of astronomical terms depend on the resources of the national language, on units borrowed from other languages, and on the growth of scientific literature. In English, astronomical terms are widely used in international scientific publications, educational materials and research. Comparing the terminology of the two languages makes it possible to see both the scientific content they share and the language-specific ways in which that content is expressed.

LEXICAL-SEMANTIC FEATURES OF ASTRONOMICAL TERMS IN UZBEK AND ENGLISH

When comparing astronomical terms in Uzbek and English, the first things to look at are their meaning, how precisely they express a scientific concept, and the contexts in which they are used. The forms of the terms may differ, yet they can refer to the same scientific object or phenomenon. English planet and Uzbek “sayyora,” for instance, both name a particular kind of celestial body that revolves around a star such as the Sun. Star and “yulduz” are used for bodies that produce their own energy. These examples show that different forms can express shared scientific concepts in the two languages. The table below shows how some astronomical terms correspond in Uzbek and English.

English term	Uzbek equivalent	Brief explanation
Astronomy	Astronomiya	The science that studies celestial bodies and the universe
Planet	Sayyora	A celestial body that orbits a star
Star	Yulduz	A celestial body that emits its own light and energy
Galaxy	Galaktika	A system made up of stars, gas, dust and other components
Comet	Kometa	A small icy and dusty body that moves around the Sun
Asteroid	Asteroid	A small celestial body that orbits the Sun
Orbit	Orbita	The path of a celestial body relative to another body or system
Eclipse	Tutilish	A phenomenon in which one celestial body blocks the light of another or passes into its shadow

The examples in the table show that the terms match in meaning. Some keep an international scientific form, while others use a native Uzbek alternative. “Galaktika” and galaxy are close in form, whereas “qora tuynuk” and black hole express the same scientific concept through different lexical units. When comparing meanings, one should also keep in mind the gap between a word’s everyday definition and its scientific one. In daily speech some words can be used broadly, but in a scientific text they are tied to a specific concept. The Uzbek word “yulduz,” for example, can also mean a famous person in ordinary speech, while in an astronomical text it refers to a specific type of celestial body. English star is ambiguous in much the same way. So the meaning of a term has to be determined not by its dictionary form alone but by its function in the text and its scientific context.

THE USE OF ASTRONOMICAL TERMS IN UZBEK AND ENGLISH

Astronomical terms are in active use in scientific articles, textbooks, encyclopedias, popular science publications and educational resources. Their job goes beyond naming objects and phenomena: terms help organize scientific information, describe observational results and explain theoretical concepts. In Uzbek, astronomical terms appear in school and university textbooks, in popular science articles and in translated astronomy materials. Units such as “Quyosh tizimi,” “Oy tutilishi,” “yulduzlar evolyutsiyasi” and “gravitatsion to‘lqin” express different astronomical concepts. In English, the corresponding terms Solar System, lunar eclipse, stellar evolution and gravitational wave are used in scientific publications and teaching materials. Although these units match their Uzbek counterparts in meaning, the way words combine or the way a scientific definition is phrased sometimes changes in translation.

Lunar eclipse, for example, is rendered in Uzbek as “Oy tutilishi.” The English adjective lunar becomes, in Uzbek, the noun “Oy” (Moon) in its modifying form. This example shows that the two languages can express a scientific concept in different ways. What matters here is that the astronomical meaning is preserved, not the grammatical form. Another example is light-year and “yorug‘lik yili.” This term denotes not a unit of time but the distance light travels in a vacuum over one year. If a translation treats it as an ordinary measure of time, the scientific meaning can be misread. Knowing the scientific definition of a term is therefore especially important when studying astronomical vocabulary.

The purpose of a text also plays a role in how terms are used. A scientific article demands a precise definition and consistent use of each term. A popular science text may add a short explanation so that the term is clear to the reader. “Qora tuynuk” (black hole), for instance, might

be explained briefly in a popular text, while a text for specialists would describe its physical properties in detail. For this reason, judging how a term is used means looking not only at whether it is spelled correctly but also at whether it is explained in a way that suits the intended audience.

CONCLUSION

A comparative study of astronomical terms in Uzbek and English helps show how scientific concepts are expressed in the two languages. This research looked at the function of astronomical terms in scientific communication, their lexical-semantic features, the problems they cause in translation and their practical value. The analysis shows that Uzbek and English can express identical or corresponding astronomical concepts through different forms. “Sayyora” and planet, “yulduz” and star, and “galaktika” and galaxy are examples. At the same time, similarity in outward form or dictionary meaning does not guarantee that terms are used identically in every context. Their meaning has to be established from the relevant scientific definition and the content of the text. When astronomical terms are translated, scientific accuracy, terminological consistency and the use of reliable sources are the main requirements. If a term is chosen wrongly, or its meaning is not sufficiently explained, readers find it harder to understand the scientific information correctly. Translators and researchers therefore need a grounding in linguistics as well as a good command of basic astronomical concepts. Studying this topic opens practical possibilities for using English-language scientific literature, translating astronomical texts well and developing scientific terminology in Uzbek. In the future, it would be worthwhile to analyze a larger corpus of texts, study how the terms are used in more detail and improve bilingual astronomical dictionaries.

REFERENCES

1. International Astronomical Union (IAU). Frequently Asked Questions (FAQs). Official website: https://www.iau.org/IAU/IAU/Astronomy-FAQs/FAQs.aspx
2. Bo‘ronova, Sh. A., Umarova, Z. H. Problems of translating astronomy-related texts from English into Uzbek [Astronomiya sohasiga oid matnlarni ingliz tilidan o‘zbek tiliga tarjima qilish muammolari]. Oriental Renaissance: Innovative, Educational, Natural and Social Sciences, 5(4), 2025, pp. 32–36. https://www.oriens.uz/uz/journal/article/astronomiya-sohasiga-oid-matnlarni-ingliz-tilidan-ozbek-tiliga-tarjima-qilish-muammolari/
3. Baxtiyarova, F. A formal-structural description of astronomy-related terms in explanatory dictionaries of the Uzbek language [O‘zbek tilining izohli lug‘atlaridagi astronomiyaga oid terminlarning formal-struktur tavsifi]. Conferences of the Uzbekistan State University of World Languages. https://conference.uzswlu.uz/conf/article/view/364
4. Dadaboyev, H. Uzbek Terminology [O‘zbek terminologiyasi]. Tashkent, 2019.
5. Explanatory Dictionary of the Uzbek Language [O‘zbek tilining izohli lug‘ati]. Used as a lexical source for determining the meaning of astronomical terms.