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This book is dedicated to Books Do Furnish a Room in Durham, North Carolina, the bookstore where, in the fall of 1999, I came across the paperback that introduced me to the Strugatskii brothers: *Soviet Science Fiction*, edited by Isaac Asimov. I am grateful to Asimov for having introduced me to this world, and to Violet Dutt for having translated "Spontaneous Reflex" (one entry in the collection), the first text by the Strugatskiis I ever read.

Acknowledgements

First, I would like to thank Jehanne Gheith, my thesis advisor at Duke, who, in January of 2004, read a short paper that was the first, poorly formulated version of what would later become this book. I also wish to thank Yvonne Howell, who, moved by Boris Natanovich's death (the news of which spread among the Soviet science fiction researchers at ASEEES in New Orleans in late November of 2012), suggested that I contribute a paper to a panel on the Strugatskii brothers and science. This conversation prompted me to dig out that old essay and to work it into a paper that I presented at ASEEES in Boston the following fall. I doubt very much that I would have taken those first steps towards writing this book had Professor Howell and I not spoken that day.

I would also like to thank Ivana Vuletic, my dissertation advisor at UNC, who supported me in my quest to fuse poetry and science fiction (Maiakovskii, the Strugatskii brothers, and the New Soviet Man), an experience that prepared me to explore the role of Pushkin's poetic texts in the works of the Strugatskiis that I investigate here.

I wish to thank Sibelan Forrester, whom I met when she served as the panel discussant at AATSEEL in December of 2008, at which I was presenting a paper on Maiakovskii, the Strugatskiis, and "functional immortality." She made me feel, even when I was a graduate student, that I was a co-equal member of the relatively small number of those who study Soviet science fiction. Scholarship cannot thrive without the active intervention of influential persons like Professor Forrester on the behalf of those coming up.

Outside of Slavic studies, I owe a great deal to the excellent math professors under whom I studied at both Duke and UNC, particularly to Robert Proctor, in whose classes I most thoroughly learned the rigorous art of writing mathematical proofs. Training in this art has benefited me both as a teacher and as a writer—logical rigor is a tool with myriad uses.

I was fortunate to have two careful readers, Jasmine Trinks and John Wright, who helped me tighten the manuscript up before submission. My

two anonymous readers provided invaluable insights that aided me in my post-submission revisions. Additionally, Thomas Seifrid, the series editor of "The Real Twentieth Century," helped me early on with a fundamental reframing of the book project, suggesting that I move the focus away from astronomy and place cosmology at the center of the book's "universe."

For nearly twenty years I have been corresponding via email with Alla Kuznetsova, a prominent member of the "Liudeny," the Russian fan collective devoted to researching the Strugatskiis. In addition to serving as a sounding-board for ideas, Ms. Kuznetsova was kind enough to find for me books that I needed for my research that are available in no American library. Among these was Polak's 1939 *Kurs obshchei astronomii*, which Arkadii Strugatskii used for self-study during the Blockade, and the 1933 Russian translation of Jeans's *The Stars in their Courses*, another childhood favorite of Arkadii Natanovich. Lacking access to these texts would have left gaps in my research, and I am very grateful to Ms. Kuznetsova for having mailed these volumes to me across the world.

In the years that I have been working on this book, I have been in contact with four acquisitions editors at Academic Studies Press, beginning with Sharona Vedol, who first got in touch to encourage me to submit a proposal. Since then, I have corresponded with Meghan Vicks (who oversaw the drafting and signing of the contract), Oleh Kotsyuba (who facilitated the final submission and reader reviews), and Ekaterina Yanduganova (who has kept me abreast of the copy-editing and other final stages). Each of the four has been very helpful, always willing to field my myriad questions. Finally, Kira Nemirovsky, the production editor, brought the book to its final, polished form. My thanks go out to these and all other persons at ASP who worked on bringing this thing into the world.

In the very final stages of editing the book, a potential discrepancy arose regarding the calculations I had done on the altitude of Vega across various dates in 1937—calculations that are crucial to one of the conclusions I make in Chapter Seven on *The Doomed City*. I would like to thank my former Russian student Patrick Wise for putting me in touch with Amy Sayle of UNC's Morehead Planetarium. I would like to thank Dr. Sayle herself for putting a second set of eyes on my reasoning and on my math—and for pointing out that the timing of sunset should be incorporated in the discussion.

I thank my parents for their support during this process, and my son Henry—who grew from a toddler to a third-grader while this book was being written—for being a model of curious inquiry. I would also like to thank Karin Breiwitz for making a professional version of my hand-drawn chart of the altitude of Vega that appears in the Appendix.

Rarely have I taught a class in literature without reaching new insights into the works I teach. Until I was working on my lesson plans for *A Billion Years Until the End of the World* in the spring of 2012, for instance, I had not noticed its crucial poetic substructure, despite having read it numerous times. In the years that I have been teaching, I have been very fortunate to have worked with students whose own ideas deepen my understanding of works I have read more times than I can recall. No great work of art has a bottom—teaching reminds me of this repeatedly. Access to the minds of others has consistently served to sharpen my own; channeling this energy source has proven a key part of my creative process. Though I have thanked some of my students in the body of the text, I would like to take this opportunity to extend my gratitude to their entire collective. I am fortunate to have known them and to have worked with them.

Пугачев бежал по берегу Волги. Тут он встретил астронома Ловица и спросил, что он за человек. Услыша, что Ловиц наблюдал течение светил небесных, он велел его повесить *поближе к звездам.* Адъюнкт Иноходцев, бывший тут же, успел убежать.

Pugachev fled along the Volga. On the riverbank he chanced on the astronomer Lowitz and asked him who he was. Hearing that Lowitz observed the movement of the heavenly bodies, he ordered him hanged "as close to the stars as they could pull him." Lowitz's adjunct Inokhodtsev managed to escape.[1]

Pushkin, *Istoriia Pugacheva*
[*The History of Pugachev*, 1833]

Земля недвижна; неба своды,
Творец, поддержаны тобой,
Да не падут на сушь и воды
И не подавят нас собой.

The Earth is motionless; the vault of heaven,
Creator, is held up by you,
That it may not fall on the land and waters
Nor crush us.

Pushkin, "Podrazhaniia Koranu"
[Imitations of the Koran, 1824]

1 This is the late Paul Debreczeny's translation, from his 1983 *Aleksander Pushkin: Collected Stories* (Stanford University Press, 535). All other translations, unless otherwise indicated, are my own.

Сижу у телескопа.
Отмерзла моя ж…па.
Сижу и в небо ясное смотрю.
Ищу я до рассвета
Проклятую комету
И шепотом полсвета матерю.

Ой, папа, милый папа,
Твой сын — большая шляпа,
Обидно, ето самое, до слез!
Он мог бы стать артистом,
Извозчиком, дантистом —
Но черт его в астрономы понес.

I sit at the telescope.
My ass has frozen off.
I sit and look into the clear sky.
Until dawn I look
For the damned comet
And curse half the world in a whisper.

Oh, papa, dear papa,
Your son is a big nobody,
It's enough to make you cry!
He could have become an artist,
A cab driver, a dentist—
But the devil made him an astronomer.

An early unpublished poem by Boris Strugatskii

A Note on the Names of Our "Author"

In a 1995 interview with Boris Vishnevskii, when asked about the Strugatskii brothers' inseparability, Boris Strugatskii replied: "[t]hat we were inseparable is what you would call a 'medical fact': two authors, Arkadii and Boris Strugatskii, writing in collaboration, did not exist; there was one author—the Strugatskii brothers."[1] So firm was their conviction on this matter that, upon the death of his brother, Boris Natanovich resolved never to attach their name to anything he wrote. This resolution is an extension of the agreement between the two that anything either wrote individually would be published under a pseudonym. Boris Natanovich wrote his two post-Strugatskii-brothers works—*Poisk prednaznacheniia* [*A Search for Purpose*, 1995] and *Bessil´nye mira sego* [*The Powerless of this World*, 2002]—under the name S. Vititskii. Arkadii Natanovich wrote three works—*Podrobnosti zhizni Nikity Vorontsova* [*The Particulars of Nikita Vorontsov's Life*, 1984], *Ekspeditsiia v preispodniuiu* [*The Expedition to Hades*, 1988], *D´iavol sredi liudei* [*The Devil among Humans*, 1993 (published posthumously)]—as S. Iaroslavtsev. For this reason, here "the Strugatskii Brothers" will be referred to as one writer. In his 2008 biography of the brothers, Ant Skalandis includes a very elegant metaphor for their partnership, supplied by their fellow science fiction writer Vladimir Mikhailov:

> They were like two bouncy balls: when they were pressed to one another, at the tangent point of their spherical surfaces would form a plane, a new essence, which was the very result of their joint creative work. But they could not remain for long in such a strained state, the repulsive force would win

1 Boris Vishnevskii, *Arkadii i Boris Strugatskie* (St. Petersburg: Terra Fantastika, 2003), 30.

> out, and both would roll on independently along their own paths, until the next inevitable meeting.[2]

This plane that Mikhailov describes is "The Strugatskii Brothers."

It will nonetheless be necessary frequently to address the brothers as individuals. To refer to them only as "Arkadii" and "Boris" is too informal for an academic study, while the constant repetition of "Arkadii Natanovich" and "Boris Natanovich" would crowd the discussion. Thus I will adopt the abbreviations AN and BN, used by the brothers themselves in their notes and by Russian researchers and fans of the Strugatskiis' works. Related is the abbreviation ABS (Arkadii and Boris Strugatskii), one which I myself will deploy sparingly, but which the reader will encounter occasionally in quotations.

2 Ant Skalandis, *Brat´ia Strugatskie* (Moscow: AST, 2008), 186

The Strugatskiis' Pushkinian Cosmology

Что в имени тебе моем?
Оно умрет, как шум печальный
Волны, плеснувшей в берег дальный,
Как звук ночной в лесу глухом.

Оно на памятном листке
Оставит мертвый след, подобный
Узору надписи надгробной
На непонятном языке.

What's there in my name for you?
It will die, like the sorrowful sound
Of a wave splashing on a distant shore,
Like a nighttime sound in an impenetrable wood.

On a memorial card
It will leave a dead mark, like
The pattern of a grave inscription
In an incomprehensible language.

Pushkin, 1830

Many of my first-time literature students are surprised and dismayed by just how often Pushkin comes up in courses in which his works are not being read. They, being new to Russian literature, do not understand that all

Russian writers exist in a universe of Pushkin's devising, and that his influence is all-pervasive. That being said, I could not have anticipated, when I began this project, the major role that Pushkin would end up playing in the second half of the book. While the references to Pushkin in *Piknik na obochine* [*Roadside Picnic*, 1971], *Za milliard let do kontsa sveta* [*A Billion Years until the End of the World*, 1974], *Grad obrechennyi* [*The Doomed City*, 1975], and *Otiagoshchennye zlom, ili Sorok let spustia* [*Those Burdened by Evil, or Forty Years Later*, 1988] were known to me as I began the process of rereading, I had given far too little thought to their function within each text and had not considered Pushkin as a thread running through these multiple late works. Whether the Strugatskiis chose to engage Pushkin more directly towards the end of their career is less of a salient question than that of why such an engagement is crucial or even inevitable. Pushkin *is*—or at least defines—the cosmology of Russian literature, and the metaliterary elements stitched into the cosmologies of these four works by the Strugatskiis make a dialogue with Pushkin natural, or even necessary. To ignore Pushkin in this context would be akin to writing a history of astronomy making no mention of Galileo. And while it might seem odd to offer a justification for including so much Pushkin in a study of Russian literature, the strange and special outsider status of science fiction might lead some to see the poet as out of place here. To these readers, I will say only, paraphrasing Gogol, that I did not at first seek to feature Pushkin so prominently, but that the circumstances of my study made it impossible to do otherwise. I would say, too, that I include him gladly, and that the centrality of Pushkinian subtexts in the later works of the Strugatskii brothers has been the happiest discovery of what has been a very fulfilling investigation.

Introduction

До свода адского касалася вершиной
Гора стеклянная, как Арарат остра —
И разлегалася над темною равниной.

A mountain of glass, knife-edged like Ararat,
Touched its peak to the top of hell's vault—
And sprawled over the darkling plain.

Pushkin, "I dale my poshli…" [And we went on further …, 1832]

The first two pages of the Strugatskiis' 1958 novella *Put´ na Amal´teiu* [*The Way to Amalthea*] consist of what was at the time a scientifically accurate depiction of the night sky as it would be seen by an observer on the surface of Amalthea, then thought to be the only non-Galilean moon of Jupiter.[1] The earliest origins of this work, in fact, are bound up with the observational data presented in this opening passage: in a letter dated June 5, 1957, AN requests from BN all the latest scientific information on Jupiter and its satellites. He writes:

> …find for me without delay all data about Jupiter and its satellites: everything possible, hypothetical, and conjectural, etc. Their distance to Jupiter, their dimensions, their rotation periods, their atmospheres, their environments, etc. About Jupiter itself I need everything, starting with its distance from the Sun and ending with hypotheses on its interior structure. Then I need

1 The current count of Jupiter's satellites is seventy-nine, most of them small, irregular bodies captured by the gas giant from solar orbits.

> to know whether it's advisable to take Jupiter as the best possible object for testing the "Kozyrev Effect."[2] I need all these data WITHOUT DELAY.[3]

The first pages of *Put´ na Amal´teiu* show that these requested data were indeed deployed in the writing of the novella: it begins with a brief summary of the moon's orbital and rotational characteristics, followed by a description of the rising of Jupiter over the close horizon, the occultation of the Sun by the gas giant, and other phenomena that presumably can be observed from the surface of Amalthea. It is made clear early on that the reader is being placed "at the eyepiece," in the seat of an observer within the Jupiter system itself, not in the position of a then-contemporary astronomer who could imagine the scene only on paper, through observational data and orbital calculations. The narrator advises the reader that, to see these sights, one needs only to take the elevator to the top floor, to the area "under the clear spectrolite dome."[4]

The Strugatskiis were writing in the late 1950s, long before the *Pioneer* and *Voyager* missions were to bring back pictures of Jupiter and its moons, and so they could depict the view of an Amalthea-based observer only by first doing extensive astronomical "homework." Equipped with BN's graduate and professional work in the field and their years of youthful experience as devoted amateur astronomers, the brothers were more than up to the task.

Yet *Put´ na Amal´teiu* is far from an astronomical treatise disguised as a novella. It depicts the plight of scientists who are threatened with starvation due to a fungal outbreak that has consumed the stores at their distant outpost and the heroic efforts of a crew of *mezhplanetniki*[5] on the spaceship *Takhmasib*, hurtling towards them on a desperate resupply mission. The

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2 AN is referring to Nikolai Aleksandrovich Kozyrev, who was a young astrophysicist during the purge of astronomers at the Pulkovo Observatory. He was arrested on November 3, 1936 and served ten years. Eremeeva, "Political Repression and Personality: The History of Political Repression against Soviet Astronomers," *Journal for the History of Astronomy* 26, no. 4 (1995): 297–324, see in particular p. 308. AN is referencing Kozyrev's assertion of a certain asymmetry in the shape of Jupiter's disc, a problem on which BN worked—and which he refuted—during his time at Pulkovo. Skalandis, *Brat´ia Strugatskie*, 226.

3 Arkadii and Boris Strugatskii, *Sobranie sochinenii v odinnadtsati tomakh* (Donetsk: Stalker, 2001), 1: 663.

4 Ibid., 1: 549.

5 *Mezhplanetniki* (singular, *mezhplanetnik*, "one who is between planets") is a neologism commonly encountered in the Strugatskiis' early works, all of which focus on the assimilation of the Solar System by Soviet scientists and explorers.

parallels with the Blockade of Leningrad—an event through which both AN and BN had lived and which killed their father Natan Zalmanovich—are readily apparent. For the reader of 1958, the connection would have been obvious, but the Blockade is explicitly mentioned by a minor character—Zoika Ivanova, an astrometry lab assistant—just to drive the point home: "But is this really starvation? […] I just read a book about the war with the Nazis: that was real starvation. In Leningrad, during the Blockade."[6]

As the *Takhmasib* approaches Jupiter, it is crippled by micro-meteorite impacts and pulled into the gas giant's gravitational well. The Strugatskiis' depiction of the ways in which humans would cope in a high-gravity environment is not only the kind of science fiction thought experiment that only an astronomer could pull off effectively, but also is an opportunity to depict the "extreme environment" of the Blockade via fantastic scenario. The numerous descriptions of the crew crawling along the corridors of the crippled ship, hardly able to lift their heads, cannot but evoke images of Leningraders, weakened by starvation and unable to walk. The most direct of these oblique references to the Blockade comes when the crew, barely able to sit up, attempt to eat soup. Their captain Bykov sternly warns them that the added weight of the soup in their bodies could very well be fatal. He says: "This soup will kill you. […] Eat it, and you will never stand up again. It will crush you, do you understand?"[7] This scene is a painful reminder of those evacuees from Leningrad who were killed by being given food that their weakened bodies could not digest. AN's letter[8] from evacuation to his classmate Igor´ Ashmarin, who lived across the hall from the Strugatskiis,[9] describes just such an instance. Just after the group in which AN and his father had crossed the frozen Ladoga reached Zhikharevo, the first train station on the other side of the lake, everyone was treated to food that overwhelmed their weakened digestive systems:

> With almost no strength left, we crawled out [of the truck] and went into the barracks. Here it's likely that the head of the evacuation center had been committing an enormous crime the whole time the evacuation had been underway: he had been giving each evacuee a loaf of bread and mess-tin of

6 Strugatskii, *Sobranie sochinenii*, 1: 575.

7 Strugatskii, *Sobranie sochinenii*, 1: 606.

8 This letter is also reproduced in Vishnevskii, *Arkadii i Boris Strugatskie*, 18–20, Skalandis, *Brat´ia Strugatskie*, 35–36, and Dmitrii Volodikhin and Gennadii Prashkevich, *Brat´ia Strugatskie* (Moscow: Molodaia Gvardiia, 2017), 12–13.

9 AN also wrote to his mother, but the letter never reached her. Lost letters (both those he sent and those addressed to him) are an ongoing theme of AN's correspondence throughout his military career.

> kasha. Everyone threw themselves on the food, and when, later that day, our train was to leave for Vologda, no one could get up. Everyone had dysentery. The snow around the barracks and the latrines turned red in one night.[10]

In the Soviet Union of 1958, writing openly about one's experiences under the Blockade was avoided for a variety of reasons, not least of them a reluctance among those who had survived to relive what had been the darkest days of their lives. The malnutrition that AN suffered under the Blockade caused him to lose practically all of his teeth by 1945,[11] and the mustache that he wore for most of his post-military adult life was partially intended to conceal this fact. His reasons, then, for strenuously avoiding discussion of his experiences under the Blockade are quite understandable. Volodikhin and Prashkevich argue, on the one hand, that there was a kind of "taboo" against mention of the Blockade in the Strugatskiis' works, while, on the other hand, the Soviet science fiction writer Aleksandr Mirer, who wrote criticism under the pseudonym Aleksandr Zerkalov, holds that the Blockade is the Strugatskiis' crucial turning-point [*perelom*], without knowledge of which their work cannot be properly understood. Mirer's argument is by far the more convincing of the two: the Blockade is a central motif of *Grad obrechennyi* and *Khromaia sud´ba* [*A Lame Fate*, 1982], two of the brothers' most personal works. A mostly autobiographical account of BN's memories of the Blockade occupies the first several chapters of his first "S. Vititskii" novel *Poisk prednaznacheniia*. But before all these comes *Put´ na Amal´teiu*, a tale of heroism in space in which the Strugatskiis' beloved astronomy is used to address the terrible event that scattered their family and killed their father. So while *Put´ na Amal´teiu* serves as probably the earliest example of the Strugatskiis' "Aesopian" technique of depicting problems of Soviet existence clothed in alien settings, one must keep in mind that the brothers are in fact exploring their *own* story, one that, in this case, just happens to intersect with a major event in Soviet history.

More relevant to the present discussion is the status of *Put´ na Amal´teiu* as the Strugatskiis' first experiment in cosmology: they have taken the conditions to which they expected humans trapped in Jupiter's upper atmosphere would be subjected and have adapted them to create a kind of "cosmological microclimate" that mimics the experience of life under the Blockade. Each work to be examined in this book contains what

10 Strugatskii, *Kommentarii k proidennomu* (St. Petersburg: Amfora, 2003), 10–11.

11 Skalandis, *Brat´ia Strugatskie*, 79.

can be characterized as some "cosmology of hell," a universe in which the laws are changed such that certain "physical parameters" (defined loosely) mark it as different from the assumed consensus cosmology inhabited by the author and reader. In the Strugatskiis' works, such changes are always for the worse. As their first work to vary these parameters, *Put´ na Amal´teiu* is their most modest such effort, and their only invented cosmology with a real-world analogue. There are indications, however, of a fantastic cosmology that is still more terrible than a high-gravity environment that induces an analogue of starvation and weakness: towards the end of the novella, the planetologists on the *Takhmasib* are able to observe a previously unknown "graveyard of worlds" [*kladbishche mirov*], in which they find a kind of gallery of planets that Jupiter has "swallowed."[12] Having already established the novella's parallels between Leningrad and the Jupiter system, it is relatively simple to see the swallowing of worlds as a metaphor for all that the Blockade swept away. This metaphor becomes pointed if the prologue's "celestial ballet" is read as a reflection of the kind of peaceful observing sessions that the brothers had enjoyed before the war. This world ceased to exist after the Blockade—it had been swallowed. Notably, while *Put´ na Amal´teiu* has a happy ending, the first version of the work markedly does not. While *Put´* concludes with the *Takhmasib* limping to J-Station on Amalthea, crippled but intact, thus lifting the "blockade" of the planetoid, the draft version of the novella, titled "Strashnaia bol´shaia planeta" [The Terrible Big Planet] and written by AN alone in 1957, chronicles a similar disaster—a spaceship on a resupply mission in the Jupiter system hobbled by multiple meteorite impacts. This story opens in the aftermath of the impact, and the first few pages are a careful, grisly accounting of the injured and dead. It ends with the steely decision of the remaining scientists and crew, beyond all hope of saving themselves, to continue the observations of Jupiter as long as they are alive. Such grim details reflect a more accurate cosmology of the Blockade, one that the Strugatskiis do not allow to glimmer in their writing until much later, in works that will be discussed in the chapters to come. The "graveyard of worlds" is the crucial cosmological link between the two works, and its inclusion in *Put´ na Amal´teiu* is a preview of far more terrible hells to come.

There is another moment in the novella that anticipates the Strugatskiis' later cosmologies of hell. Zhilin, the ship's engineer of the *Takhmasib*, fresh

12 As the most massive object in the Solar System save for the sun, Jupiter acts as a kind of "vacuum cleaner," drawing in bodies large and small. This function of the gas giant was witnessed when the comet Shoemaker-Levy 9 impacted it in July of 1994. Such objects, however, would not hover intact in Jupiter's upper atmosphere.

out of school, reflects on having seen late in his training an unmanned vessel that just has returned from a flight outside the Solar System:

> In the hanger was suspended the recently returned photon tanker-automaton that six months ago had been hurled into the zone of absolutely free flight. The tanker, a huge, awkward construction, had ventured one light month away from the Sun. Its color surprised everyone. Its plating had become turquois-green and came off in hunks—all you had to do was to touch it with your hand. It simply crumbled like bread. […] The cadets asked Liakhov what had happened, and Liakhov answered that he didn't know. "At great distances from the Sun there's something we don't yet know about," said Liakhov.[13]

The state of this vessel is an early variation of the Strugatskiis' anxieties over the deleterious effects on those who must inhabit or explore their cosmologies of hell. Given their experience living under the Blockade, this is far from an abstract problem for them, and much of their literary practice involves the crafting of means to bring the reader into the noxious environments that they create.

The cosmologies that the Strugatskiis build in subsequent works can be based on ignorance and false logic (as is the case with those presented in *Vtoroe nashestvie marsian* [*The Second Martian Invasion*, 1966] and *Obitaemyi ostrov* [*The Inhabited Island*, 1967]), where the setting represents a kind of isolated bubble inside the larger, "correct" cosmology in which the work takes place. Most often—and this is the case with all the remaining works to be examined (*Piknik na obochine* [*Roadside Picnic*], *Za milliard let do kontsa sveta* [*A Billion Years until the End of the World*], *Grad obrechennyi* [*The Doomed City*], *Otiagoshchennye zlom* [*Those Burdened by Evil*], *Zhidy goroda Pitera, ili neveselye besedy pri svechakh* [*The Yids of the City of Peter, or Cheerless Conversations by Candlelight*, 1990])—this skewed cosmology is that in which the work is set: the characters, and hence the reader, are trapped within it. It will be convenient to have on hand a succinct term for the disconnect, experienced by both character and reader, that results from the realization that the cosmology of the work in question differs markedly, even terrifyingly, from that which defines the "outer Universe" of the author and reader. This term will be *cosmological disorientation*. The particular way in which this concept—really a special case of defamiliarization—illuminates any given work will be addressed in each

13 Strugatskii, *Sobranie sochinenii v odinnadtsati tomakh*, 1: 569.