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Authenticity and spectrality of space heritage: Baikonur Cosmodrome, Kazakhstan

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ABSTRACT

The Baikonur Cosmodrome in Kazakhstan, the world's first and largest operational spaceport for orbital and human launches, stands out for its historical significance in the space heritage but remains largely unknown to the wider public. Using a qualitative case study research approach, this study explores how post-Soviet Baikonur heritage is commodified and interpreted by various stakeholders, identified through snowballing sampling who are directly or indirectly involved in Baikonur space heritage and museums, as well as extensive content analysis of policy documents, historical and documentary accounts, tourist brochures, museum websites and multimedia digital environments from the Baikonur cosmodrome. The research shows that tangible and intangible heritage play a key role in the commodification of Baikonur visitor experience: Baikonur historic buildings and memorabilia preserved, presented, and used for visitors. Particularly, intangible dimensions such as site atmosphere and spectrality reinforce the originality of the Cosmodrome and the perceived authenticity of the site. This study contributes to advancing the literature and practice of the nexus between authenticity, collective memory and tourism development related to a unique international space heritage site in Kazakhstan. It enhances the political and societal understanding of the role of space heritage in the post-Soviet region.

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Baikonur; space heritage; authenticity; spectrality; tourism development; Kazakhstan

We invite you to take a unique space trip to the Baikonur Cosmodrome. You will plunge into a world full of mysteries and bright adventures.

(Baikonur spaceport tour, Baikonur.com, 2022)

Introduction

Space heritage can be viewed as *Lieux de Mémoire* (a site of memory), with the development of tourism acting as a catalyst for heritage conservation and regeneration (Finley, 2004). Despite the recent development of sustainable and dark heritage

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forms of tourism in Kazakhstan (Tiberghien & Lennon, 2022; Tiberghien & Xie, 2018), space heritage is mostly ignored for tourism development. In particular, a major space heritage site currently leased by the Kazakh Government to Russia until 2050, the Baikonur Cosmodrome, stands out for its historical significance and international recognition for recurrent successful rocket launches to support piloted missions to the International Space Station (ISS), yet remains largely unknown to the public.

Kazakhstan is the world's largest landlocked country and part of the former Soviet Union. Its space heritage is scarce, limited in scope, and varied in terms of tourism development and interpretation. Currently, the Baikonur heritage tours and museums attract a very small number of tourists (approximately 10,000 per year) and offer a controlled narrative of the space heritage. While there is emerging research on heritage tourism in the country (Tiberghien, 2020), limited attention has been paid to the commodification of space heritage and its interpretation for tourism.

The research settings cover Baikonur Cosmodrome industrial site and adjacent Baikonur museums. At present, the museums are emblematic of evidential and commemorative records of the Soviet space heritage, but the narratives they present regarding the history of Sovietization is constrained by government for visitors in the context of a glorified past of the space programme during the Soviet period. This study offers a first account about how space heritage in Kazakhstan is commodified and interpreted for tourism by stakeholders including policymakers, tour operators, museum management and guides, local NGOs and historians and specialists of the space industry. To address this aim, we pose three main research questions: What roles do tangible and intangible heritage play in the Baikonur visitor experience? How are Baikonur historic buildings and memorabilia presented, and used in the visitor experience? And how intangible dimensions (e.g., site atmosphere and speciality) impact the visitor experience?

In answering these questions, we will first utilise empirically derived insights to inform theoretical debates around the roles tangible and intangible heritage play in stakeholders' management and commodification of Baikonur tourism practice. Secondly, spectral geographies within the social connections between spectral places and tourism stakeholders at Baikonur are examined, particularly the social and political tensions of tourism development with the Soviet spectre—a mix of colonial and human-induced disasters enmeshed with the current geopolitical agenda of Baikonur as a Russian enclave in Kazakhstan, inhabiting and shaping Baikonur as a complex place of memory. Thirdly, stakeholders' commodification and interpretation of tourism practices at Baikonur and how they influence policy decision-making in the development of the space heritage tourism experience will be discussed.

Tangible and intangible space heritage

Cultural heritage represents a wide variety of cultural products made by humans in past eras, which are generally categorized into two major factors, tangible and intangible (Jamieson, 2006). Tangible heritage refers to such physical objects as historic buildings, landmarks, urban and rural landscapes, groups of buildings and sites, and museums; while intangible heritage, made up of all immaterial manifestations of culture, embodies the socio-psychological expression of values, lifestyles, traditions,

mores, and folklores (Vecco, 2010). At a deeper level, heritage is represented through its physicality and intangible acts of practicing or performing, as well as the process of values and meanings negotiation (Smith, 2006). It is essentially a cultural process of “meaning and memory making and remaking rather than a thing” (pp. 74-75).

Despite their individualities, the relationship between tangible and intangible heritage is synchronized and intertwined in a contemporary society. Lenzerini (2011) suggests the “constitutive factors” of intangible heritage are represented by the “self-identification” of this heritage as an essential element of cultural identity of its creators and bearers. In other words, intangible heritage can be constantly re-created in response to the historical and social evolution of the societies concerned. Munjeri (2004) asserts that tangible heritage can only be interpreted through the intangible, while the intangible values need to rely on the tangible to be visualized.

The taxonomy on space heritage emphasizes the sites or facilities uniquely suited to the design, construction and use of instrumentation that flew in space. For De Vorkin (2010, p. 229), the term “space heritage” has several connotations, of which the commonest perceived can be summarised as:

(1) heritage related to the process of carrying out science in space; (2) heritage related to manned space flight/exploration; and

(3) human cultural heritage that remains off the surface of ‘planet Earth’.

In Kazakhstan, the heritage relating to numerous key technological breakthroughs and elements of space infrastructure include the first satellite *Sputnik*, Yuri Gagarin’s first orbital flight capsule *Vostok 1*, Yuri Gagarin’s space suits and the first orbital station (*MIR*), which paved the road to the International Space Station (ISS). To safeguard the essence of space heritage, it is critical to recognize and interpret the interrelations between intangible and associated tangible heritage; and the extent to which the commodification of heritage impacts on the tourism experience.

Authenticity and space heritage tourism

The question of authenticity and the commodification of culture for tourism development has been addressed by several scholars (Cohen & Cohen, 2012; Jamal & Hill, 2004; Rickly, 2022; Xie, 2011). How the notion of authenticity is triggered by Baikonur heritage and the extent to which it entices tourism stakeholders to recognize it as an “authentic” heritage attraction informed and influenced by the history of space heritage is at stake in this study.

Heritage tourism can be based upon three types of time: ‘historic time’, ‘heritage time’ and ‘visitor time’ (Kirshenblatt-Gimblett, 1998), indicating that cultural production, or production of difference, equates with institutional memory making. Kirshenblatt-Gimblett presents a penetrative account of how certain objects, myths and memories become favoured through the prevailing imaginal vision of places and local reality-making through the development of tourism. For example, space heritage ought to be depicted in presentations of people, places, and the past Soviet times. The classification is used by Jamal and Hill (2004) to present three dimensions of authenticity. Both develop a framework for indicators of authenticity to analyse the relationship between various stakeholders involved in tourism development (see Table 1).

Table 1. Dimensions and aspects for addressing authenticity in cultural-heritage tourism.

Aspects of authenticity	Dimensions of authenticity		
	Objective (real)	Constructive (socio-political)	Personal (experiential and existence-based)
Time	Historic Time	Heritage Time	Visitor Time
Space	MacCannell's (1999) 'backstage'; real and genuine found in pre-modern locations, outside one's own spurious society (For example, sights, markers, scientifically dated material artefacts, 'genuine' objects (Bruner, 1994))	Production (manufacture) of attraction, community, destination; enclavic space (Edensor, 1998) (Socio-political landscape influencing nationhood, destination image, sense of place, heritage/historic reconstructions, etc.)	Interactive, performative touristic space; heterogeneous space (Edensor, 1998) (Tourists and residents engage in sense-making, narrative and interpretive meaning-making encounters with situated place and contextual space)
Approach	Scientific and positivist paradigms Realist and essentialist (authenticity is a fixed property of object/event); pre-modern as original/unique	Constructivism and social constructionism; postmodernism Meanings negotiated and emergent; political contest among stakeholders; space is mediated by ideological and technological forces; symbolic and constructed authenticity (Wang, 2000)	Interpretive and narrative approaches Psychological (perceptions/emotions); experiential and existence-based, where meanings emerge through the social relations that are situated and embodied in the touristic space (and place)

Source: Adapted from Jamal and Hill (2004, p. 358).

Historic time corresponds to the evaluation of authenticity by historians, scientists, or archaeologists who appraise the time, date and location as well as indicators of authentication of objects of interests. Heritage time refers to the constructivist approach pertaining to stakeholders who evaluate the object or an event in terms of its authenticity; with the public and private sectors contributing to shaping the heritage story and narratives of the place interpreted and consumed by the visitors. Because the mode of apprehending places for tourism stakeholders can be visual (Bruner, 1994), artifacts and landscapes are subject to visitors' experience and interpretation who eventually authenticate them and infuse new meanings and associations in a constructive way (Lowenthal, 1985).

For Jamal and Hill (2004, p. 357), the visitor time can be associated with 'a transcendence of time', when the tourism moment is crucial to the tourist own life. Therefore, the experiential tourism moment can exist simultaneously in the past, present and future. Wang (1999) details that the ideal of authenticity can be characterised by either nostalgia or romanticism and further divides experiential and existence-based authenticity into two dimensions, namely, *intra-personal* and *inter-personal authenticity*. Intra-personal authenticity comprises sensuous and symbolic bodily feelings where the body becomes a display of personal identity and is the inner source of feelings. Wang further states that tourists actively search for the authenticity of, and between, themselves, and what is referred to inter-personal authenticity enables tourists to realise their potential (self-making); for example, travelling 'off the beaten track' among other tourists who confront one another as social equals based on their common humanity (Turner, 1973). Existential authenticity can be found in various types of outdoor activities

as they connect visitors to a 'sense of place'(Rickly-Boyd, 2013), where authenticity is a feeling one can experience in relation to places (Knudsen & Waade, 2010) and authenticates through his emotional connection to them.

Authenticity, spectrality and space heritage

The relationships between place, memory and subjectivity and how geographies of places intersect with tourism and remembrance at Baikonur need to be investigated. In the context of space heritage, the engagement with spectral matters is in its infancy, and becomes important to understand how spatial and social relationships within the spectral aspects of space heritage are constructed. Spectrality can impact the authenticity of the visitor experience and emerges 'when apprehending what cannot be explained, expected, or represented and can be ways of making sense and even anticipating unexpected and indeterminable happenings' (Maddern & Adey, 2008, p. 293). In space heritage settings, geographies may be understood as the myriad of ways to experience mysterious morphological agencies. Edensor (2005) explains that cities encapsulate historical traces of previous social and political lives that give rise to new social realities and meanings. In this sense, spectral tourism can be perceived as 'a response of the phenomenologies of being-in-the-world' (Wylie, 2007, p. 172). The geographies of 'the broken, the static and the already passed' (Maddern & Adey, 2008, p. 293) can be animated by the hidden politics enlivening spaces in complex ways, contributing to silenced agencies and forgotten voices and histories. Consequently, the spectral enables 'an experience of space and place in which past and future participate simultaneously and in unpredictable ways, questioning how particular sites, events, and practices unsettle the relation between presence and absence' (McCormack, 2010, p. 642).

The spectral is an integral part of the geographical experience, sometimes leading to unsettling experience of place. The morphology of almost thereness, and how to engage through encounters with the affective affordances of sites of memory and memorialization was discussed by a number of scholars (Edensor, 2005; Till, 2005). In Delyser's (1999) study, a notion of authenticity that is specific to ghost towns is developed by stakeholders in terms of how they engage with the mythic, romanticized version of the past. The authenticity is partially informed and influenced by how mythic images of the landscape, built heritage and the artifacts are experienced and can convey new meanings and new associations and become tangible evidence on which interpretations of the past may be constructed.

At a deeper level, the authenticity of space heritage can be a question of aesthetic appreciation as industrial ruins are increasingly gaining momentum in tourism experiences. In the popular imagination, authenticity often bound up with the aesthetic called "ruin porn" (Griffioen, 2009) where desolate, wrecked and abandoned industrial spaces are presumed to provide the best opportunity for photographs and to represent the most faithful aspects of city culture and heritage. Tourists are often touched by a kind of melancholy (Gao et al., 2020), a sense of loss for industrial cities and a beauty in decay that have fallen on hard times; contributing to the emergence of a new aesthetic form of authenticity as experiential learning of industrial sites and products become the key element for the tourism experience.

Research setting: Baikonur Cosmodrome

The name 'Baikonur' is widely known as the location from where the first flight to space was launched. For nearly sixty years, important events in the space odyssey originated from Baikonur, as substantial investments have made this isolated location in the Kazakh steppes the biggest civilian and military launching base in the world. Towards the end of 1954, a location near the village of *Tyuratam*, a small mining town with a connection to a railway located in the heart of the Kazakh Steppe in the region of Kyzylorda, was chosen to host the cosmodrome (Villain, 1996). Surrounded by desert, the cosmodrome (located on the map in Figure 1) could receive continuous radio signals from distant ground control stations.

Comprising nine launch complexes with fourteen launch pads, thirty-four engineering complexes, three fuelling stations for space vehicles and two aerodromes, Baikonur cosmodrome is the largest space complex in the world and has been the space facility and centre of operations for the Soviet and subsequently the Russian space programme since its creation. Under Sergei Korolev's leadership of the early Soviet space programme, the Cosmodrome saw the first artificial satellite (*Sputnik*), the first manned spacecraft in human history (*Vostok 1*) which carried astronaut Yuriy Gagarin into orbit in 1961, and the manned spacecraft *Vostok 6* which carried Valentina Tereshkova in 1963, the first woman in space (Marov, 2017). Several generations of cosmonauts, orbital stations, and lunar and planetary space missions then departed from its launchpad.

The "Launch pad no. 1", known as "Gagarinskiy Start" (Gagarin's launch pad) is located 30km north of Baikonur city. The launch pad and an associated assembly building formed the initial facility where military and space developments took place at Baikonur. The eastern section of the cosmodrome, which came into operation in 1961, was used for testing a range of ballistic missiles and rocket launchers including the successful *Coio3* (*Soyuz*) spacecraft (Marov, 2017) (see Figure 2).



Figure 1. Map of Kazakhstan including the location of the Baikonur Cosmodrome. (Source: <https://geography.name/baikonur/>)



Figure 2. Gagarin's launchpad. (Source: Remco timmerman).

Since the disintegration of the Soviet Union in 1991, numerous commercial, military, and scientific missions both manned and unmanned are launched annually as part of the current Russian space programme, jointly managed by the Russian Federal Space Agency and the Russian Space Forces. In 2004, the Baikonur cosmodrome has been leased by the Kazakh government to Russia until 2050 for a fixed rent of US\$115 million per annum, with each country holding a 50% stake.

Tourist visitation at Baikonur Cosmodrome

Currently, the Baikonur heritage tours and museums attract a relatively small number of tourists (approximately 10,000 per year). Typical tours of Baikonur include a visit to the launch pad, the control centre 'Buran Energy', the 'Soyuz' and 'Zenit' areas, the Rocketeers Memorial and the museum of cosmodrome history during the first day. The second day is dedicated to the visit of the "Cosmonaut" hotel, the Cosmodrome Museum Memorial, the houses of Y. Gagarin and S. Korolev and the "Buran" Orbital Spaceship (Nomadic Travel Kazakhstan, 2022). In particular, Baikonur Cosmodrome has a museum which houses several artefacts, documents and photographs relating to space exploration and, more specifically, to the cosmodrome's history. A visit to the *Baikonur Museum* includes exhibits of astronaut memorabilia, insights into rocket construction, history of space exploration and an open-air museum of rocket engines; and a visit to the houses of the father of Russian cosmonautics Sergey Korolev and of Yuriy Gagarin located adjacent to the museum and which have been carefully preserved apart from the curtains in Gagarin's house. As stated by Marov (2017, p. 288) 'their interiors nicely convey the very modest living environment and atmosphere of those few anxious nights before the historic Gagarin flight' (Figure 3).



Figure 3. The room where Gagarin spent the night before his first manned spaceflight (April 12, 1961). Source (Author).

The museum also includes a *Soyuz* descent capsule, a variety of rocket engines, early computers, various models, and numerous artefacts and memorabilia relating to Sergei Korolev and Yuri Gagarin including the ground control panel from his flight, his uniforms, and soil from his landing site, preserved in a silver container. Baikonur's museum also holds signed crew photographs for every expedition launched from Baikonur—a tradition that has been maintained without exception (Marov, 2017). Located next to the museum entrance, a restored Buran shuttle orbiter (Figure 4) from the Soviet Buran programme, tested on a single unmanned spaceflight, has been restored and is open for visitors to experience the inside of the spacecraft.

The museum of Baikonur Cosmodrome history

In addition to *Baikonur Museum*, there is another one called *the Museum of Baikonur Cosmodrome History* created in 1968 and located 40km from the Baikonur Cosmodrome. It introduces the history of the construction of Baikonur city and the Baikonur space centre. With 7,000 visitors annually (Museum of Baikonur Cosmodrome History, 2022), the museum encompasses four halls and an exhibition gallery depicting outstanding scientists and designers, military leaders and organizers of military-industrial complex of the country and also about thousands of engineers, workers and testers of space-rocket equipment, military builders who stayed in the history background. A guided tour of the museum (tours with an English translator are organised both individually and for groups lasting 1.5 h on average) informs visitors about the history of cosmonautics and activities held on the Baikonur cosmodrome, with an emphasis about technological processes for the preparation and the launch of spacecrafts. Museum guides also accompany visitors during the tour of the cosmodrome (lasting



Figure 4. Buran shuttle orbiter (Source: Alexandr yermolyonok).

between 3 to 6 h) during which visits of the launch complexes, assembly and testing buildings, historic places of the cosmodrome are organised.

Methodology

This project follows a qualitative case study methodology and adopts an explorative/interpretive approach to explore the commodification and interpretation of Baikonur space heritage. The qualitative approach is suitable when seeking an understanding of actions, issues and processes in their social context (Phillimore & Goodson, 2004). The Baikonur Cosmodrome, the Baikonur Museum and the Museum of Baikonur Cosmodrome History are three sites identified for this study. The main research questions of the study are addressed using a mixed method research design, including (i) access to online content (e.g., tourist brochures, museum websites and multi-media digital environments) of Baikonur cosmodrome and Baikonur museums; (ii) content analysis of policy documents, historical and documentary accounts from the Baikonur cosmodrome; (iii) direct observations of sites including built heritage of Baikonur city and the launchpads, historical narrative, visual imagery, artefacts, photography and memorabilia presented at the Baikonur Museum and the Museum of Baikonur Cosmodrome History; and (iv) semi-structured interviews with twenty six key stakeholders (see Tables 2 and 3) identified through snowballing sampling who are directly or indirectly involved in Baikonur space heritage and tourism development.

Governmental officials comprised two governmental officials from the governmental agency *Kazakh Tourism* promoting tourism in Kazakhstan, the head of Entrepreneurship

Table 2. Breakdown of stakeholders for the study.

Categories of Tourism Stakeholders	Number of Semi-Structured Interviews
Operators selling Baikonur tours	5
Government officials	6
Local NGOs	3
Specialists of Baikonur and space heritage	
• Historians	4
• Space experts and journalists	8
Total tourism stakeholders	26

Table 3. Demographic profile of stakeholders.

Variable	Categories	Number	Frequency (Valid %)
Gender	Male	18	69
	Female	8	31
Age	30–40	7	27
	40–50	10	39
	50–60	4	15
	>60 years	5	19
Employment status	Full time	24	92
	Homeworker	1	4
	Retired/Other	1	4

and Tourism department from Kyzylorda region, one official from the Department of Culture, Tourism and Sports of the Administration of the City of Baikonur, one special representative of the President of the Republic of Kazakhstan at the Baikonur Complex, and the head of Kazcosmos in Baikonur, the National Space Agency of the Republic of Kazakhstan. A total of 5 local and international tour operators selling tours to Baikonur, three local NGOs specialised in the protection of Baikonur heritage including Ecomuseum Karaganda, «Avalon» Historico-Geographical Society and Public Foundation and Baikonur for Human Rights Kazakhstan; four international and local academic historians with expertise of space heritage; and eight international specialists of Baikonur including space experts from the European Space Agency and journalists specialised in the space industry.

The multi-stakeholder approach allowed the research team to interview different groups involved in the development of tourism at Baikonur. Semi-structured interviews were transcribed and content analysed (Braun & Clarke, 2006) to extract recurrent themes that were employed inductively to address the research questions and refined with the integration of secondary interdisciplinary literature (ex: Baikonur website and information from the heritage sites of astronomy in the context of the UNESCO World Heritage Convention). Following this approach, case patterns were drawn and contextualized within Baikonur's space heritage development.

Ethical approval was sought in advance and confidentiality and informed consent with participants served as guiding principles throughout the research, following the Glasgow University ethical review and procedures (application number: 400210221). Interviews were conducted both online *via* Zoom and in person at Baikonur when participants could not be reached *via* online means. The vast majority of interviews were conducted in English but when needed some interviews were conducted in Kazakh and Russian with local tour operators, local historians and at Baikonur with government officials by one of the researchers who is native from Kazakhstan and

fluent in both languages. The guide to semi-structured interview questions with various stakeholders involved in the development of Baikonur allowed participants to describe, explain and evaluate their perceptions of authenticity and interpretation of Baikonur space heritage from a tourism perspective. The approach to interviewing was flexible and content of the questions subject to include the latest developments of heritage tourism at Baikonur, and the latest secondary interdisciplinary literature on space heritage of the sites under study were considered. Results were finally compared with empirical data and situated within the Kazakhstani tourism development so as to make the findings and conclusions credible.

Findings

Authenticity and space heritage

In Baikonur, the tangibles of space heritage meet the intangibles as going to Baikonur is commented by some historians and specialists as an experience of seeing a rocket launch where it originally happened and where it is possible to witness the original buildings and launchpad as described in the school textbooks. For a majority of interviewees, the fascination about Baikonur is its living heritage, both as a historical and operating site functioning at the same time. They make mention of the highly unusual experience walking in the footsteps of Gagarin, as one Russian space expert commented:

Baikonur is fascinating because it is where spaceship all began. It is very authentic; Nothing is glamorous. It is not a place where we go to get maximum comfort; it's a place where we go to feel the spirit of the Soviet space programme: the monuments and buildings are very authentic to me.

The director of the local NGO 'Ecomuseum Karaganda' collecting space debris is akin to keep the decayed buildings in Baikonur as essentials for tourists:

'The more it is frozen in time, the more it is interesting. The restored and repainted areas are badly perceived by tourists as lacking authenticity. The local authorities didn't understand that these old Soviet buildings and exhibits are the valuable historical and authentic heritage assets.

In Baikonur, facilities of the space infrastructure are regarded as historically important heritage artefacts (Marov, 2017). The facility containing Gagarin's launch pad that contains the functional space technologies and buildings used for testing and launching manned missions into space are perceived by a great majority of stakeholders as the most valuable tangible asset for tourism as nothing has been removed or even partially demolished since Gagarin's time. One government official particularly stressed that the originality of the space facilities is beyond doubt, a '*genuine, real and appealing authenticity*'. Or a tour operator emphasised '*a kind of 'small world' left there, preserved since April 12, 1961*'. As Marov (2017, pp. 285-290) opines, '*the original launch pad and its close environment have experienced some reconstruction in order to utilise modern equipment, but there have been no significant changes that would compromise authenticity*'.

Memorabilia, Gagarin and Korolev's cottages

In a similar vein for the launchpad facilities, the Gagarin and Korolev cottages were perceived by some specialists of the space industry as refurbished but not altered, where the original furniture and personal belongings left in place. For Walker (2021, p. 269), Gagarin's cottage conveys 'a sense of incongruity, its piece of old Russian rusticity'. In the cosmodrome now formally called Baikonur, the cottage where he spent his last night before his flight is believed to be preserved precisely as it was, 'with his shirt and tie hanging at the end of his bed', as one space expert and journalist of the Soviet space heritage specifically mentioned:

When you're visiting the cottages, you have the feeling everything is left as it was.

One morning they left and never came back... you still have the bottles and glasses....

The authenticity of space heritage is additionally found in the Baikonur museums, particularly in the photographs of astronauts with their signatures and memorabilia. As one of the space experts described:

You want to see and touch the real things - the object that have been sitting there for the past 50 years; taken from cosmonauts and were put in the museum. And you have the feeling it has not moved since.

Similarly, the governmental specialist of the Department of Tourism of Kyzylorda region additionally commented:

When you enter the museums, you feel the spirit of Soviet times. Nothing has changed. It also re-enacted memories from my childhood when I first saw the Buran space shuttle.

Site atmosphere awe-inspiring tourism experiences of Soviet times

The intangible aspects of the tourism experience in Baikonur can be found in the 'atmosphere of the Soviet Union' and the 'site aura and prestige'; 'almost sacred' for some historians and tour operators; with the importance of the site location for the space industry playing a key role in the experience of tourists. Most of Baikonur area is perceived as 'frozen' in Soviet times, triggering nostalgic and deeply emotional feelings about the space era as one of the historians of Baikonur highlighted:

It looks very much Soviet and legendary. You can see some parts which are left from times immemorial; it's evolving but I would say the cosmodrome is where you have this kind of magic, out of time feeling, because you can see the huge space industrial structures in the background, you cannot approach them, but you can see the launch pads.

Walker (2021, p. 388) details quoting a Life magazine's reporter as 'Gagarin's voyage 'outsoared the shadow of the Cold War and touched the hope and imagination of all men'. Gagarin's voyage in space enables people to *connect* to him in an empathetic way to the life of a person who has done and seen things like no other person. This connection to the glorious Gagarin's legacy enables existential empathetical feelings during which visitors realise the magnitude of the extraordinary challenges of the space odyssey. One international historian of Baikonur commented:

Suddenly the experience is special and unique this is certain – for visitors who are inclined to adventure - There are a lot of these abandoned places even in the living areas of Baikonur... curiosity and imagination are at play here; you will try to imagine those places such as ‘if I were there at that time’.

Some tourism stakeholders commented on the heritage tourism experience at Baikonur, something awe-inspiring about seeing the launch pad with their own eyes, even though the imagery is familiar from the numerous media about the site. For some participants including tour operators and local NGOs, an existential and activity-based form of authenticity emerged through the specific encounters situated and embodied in the touristic space, as one tour operator suggested:

Baikonur is the only place in the world where it is possible to go inside of a space shuttle that went and returned from space; very few people know about it.

Spectral geography: ghosts at Baikonur?

In Baikonur the past also lives in the present, imbued by its former Soviet legacy and current geopolitical tensions. Parts of Baikonur are characterised by histories of abandoned sites and structures surrounded by a vast and empty steppe landscapes. As well as acknowledging the ‘objective’ authenticity of the pad, a great majority of specialists of Baikonur heritage additionally talked about this very special feeling of ‘meeting the ghosts of the past’ in Baikonur as a local space expert detailed:

You can feel the ghosts of the past when you go to the launchpad in Baikonur. It is exactly where it was, you have goosebumps. There were the engineers, and you are standing in their footsteps.

Over time remains of old Baikonur buildings and sites have become generative of a spectral geography through emotions colliding with the Soviet Union past while visiting the site, as one international historian detailed:

Baikonur is full of legends such as Yuri Gagarin. When walking through Baikonur city, some local people mention this location is the last place in the city where Yuri Gagarin went to see the sunset on the day before his historic launch...when you visit Baikonur there are plenty of stories like that.

Since 1961, Baikonur has been closely associated with manned missions, with the history of Baikonur being considered as the Soviet Union’s pioneering exploits in space. However, like any human adventure, ‘this glorious history also includes disasters and tragedies’ (Villain, 1996, p. 135). Space travel and rocket launching and visits to the complex of Baikonur may include memorial sites of the “Nedelin disaster” when an R16 Soviet Intercontinental Ballistic Missiles (ICBM) exploded on the test launch pad, killing more than 90 people, including the commander of the development team, Chief Marshal Nedelin. Altogether, at least 231 people died in the course of their duties at Baikonur and Plesetsk including six cosmonauts who died in training, in plane crashes and from various other causes, and four who perished in space, in 1967 and 1971 (Villain, 1996). These later stories and interstitial inheritance from the Soviet era about Baikonur as the location where the ICBM programme was largely conducted and tested and where launch facilities were once located can be found, are overall

largely overlooked. For Steen (2008, p. 319), 'a whiff of Soviet-era secrecy still hangs over Baikonur today—and this indeed is part of its appeal to many would-be visitors. As the last nuclear missiles were shipped away in 1983 and uninformed officers are still everywhere and, together with the neat rows of old Soviet apartment blocks, many of them no longer inhabited, they lend the feel of a provincial garrison town'. This significance of the place during the Cold War makes for an extra element in the 'dark' atmosphere of the site (Dark-tourism.com, 2022).

Spectral geography serves to displace place and self through the freight of ghostly memories (Derrida, 1994). At times, the story of Baikonur is linked to a number of spectral linked themes such as memory and forgetting of the space history, both human and culturally, encapsulated in a narrative of the glorification of the space odyssey at the Baikonur museums with some acknowledgements of the Soviet past of builders and astronauts. Stories about the working conditions at Baikonur are occasionally conveyed during the guided tours depending on the guides, as detailed by a local tour operator:

Details of the stories conveyed at Baikonur depend on the guide. The tours can be organised to explain the contribution of each person at Baikonur, the engineers, the builders etc. The failures about the rocket trials are described in great detail to reveal the very difficult working conditions in those days.

Drawing on Derrida's (1994) work that has brought attention to the ways in which spaces are haunted, the ghosts in Baikonur are never really far, from the traumatic place of memory of the numerous builders and soldiers who lost their lives for the construction of Baikonur to the remains of decayed buildings which served the space industry at the construction of the site. As one international space expert and journalist of Baikonur explained:

It's a bittersweet atmosphere there - parts of Baikonur like ghost towns, but we didn't get to see those areas as tourists. And this feeling of being lost in time... I can't imagine how it must have been in the winter, when it was so cold and lots of people were outside building the sites.

When taking a walk in Baikonur, visitors can encounter monuments of a number of rocket engineers and scientists including Gagarin, Korolev and Nedelin, contributing to the memory of the ones who gave their lives for the space exploration. However, although the story of the Nedelin catastrophe is covered in the museum contents or guided tours (Figure 5), very little information is provided about other rocket explosions and their immediate environmental impact on Baikonur surrounding environment and communities.

One space expert of Baikonur argued:

You know that things went wrong at some stages, big accidents happened, but you don't really get a full explanation of the tragedy, besides some of the commemorative monuments for the people who lost their lives in Baikonur.

When apprehending what cannot be explained (Dixon, 2007), some tour operators mentioned a feeling of '*epitaph or markers*' that are haunting, in the form of a very sanctified space. On the one hand, visitors are walking on '*holy ground*' in Baikonur as almost of the heritage is kept intact. On the other hand, the ghostliness part of the experience is significant while you are visiting the site, as one international historian detailed:



Figure 5. Information about the 'Nedelin' catastrophe of the 78 engineers who perished in the explosion during the tests of the missile R-16 on 24 October, 1960 (Source: Author).

It is the strangest experience you can have as Baikonur is in the middle of nowhere, a place that was conceived in the beginning of the Cold War in the 1950s under extreme secrecy. It's a very different experience than any other space heritage site in the world, the remoteness, messiness, and randomness add to the off the beaten track experience.

Steen (2008, p. 332) echoes 'that large swathes of the cosmodrome stood still, leaving nothing but abandoned Soviet-era projects and empty missiles silos giving the impression that much of the Baikonur looks derelict, as if the Space Age had come and gone'. This feeling of being lost in time is emphasised by a space expert and repeat visitor of Baikonur:

The culture of secrecy strengthens the feeling of authenticity. Until the last moment you're not completely sure you're going to be allowed to enter. You sit in the cockpit of the Buran, and you feel that were there before you- it's very authentic- it's not a commercial experience – nothing is recreated in a studio - it's a very different experience.

A tour guide who led tours in Baikonur 35 times added:

It's the old system of Soviet Union. When some place is not used anymore, they just close the door and throw away the key. When Korolev and his team abandoned the sites, I wanted to go around there, and it looked like it is the same like Chernobyl you know... We came across the control system hall of 'Energiya Buran' that we encountered by chance during a tour in 2018 and that was very authentic. We went to a long corridor, then a tunnel and suddenly it was there!

The scenery of the Soviet Energiya-Buran has the capacity to awaken a Soviet world with affective intensity and invoke a sense of vulnerability and loss of hope created by the emptiness of the building. This feeling of uncertainty, a loss of time fosters the impressions and experiences of mythic images of the landscapes and the reminiscence of a busy Soviet space era that was once prevailing in the area.

Discussion and conclusions

This study contributes to advancing the literature and practice of space heritage for tourism as well as the exploration of spectral geography related to a unique international heritage site in Kazakhstan. The findings demonstrate how space heritage is enmeshed with commodification of heritage, collective memory, and tourism development.

Within the prism of spectrality, Baikonur heritage testifies of a Soviet past and narratives entangled in the hegemony of the space scientific achievements of the Soviet Union. Findings show that in terms of tangible and intangible heritage, the adjacent museums become emblematic of evidential and commemorative records of the Soviet space heritage. In the former Soviet Union, the control of space is seen as both an ideological quest and a powerful military where the Soviet's past mainly glorifies the achievements of the space programme. In a similar vein, the memorialization process and cultural representation of the Soviet space heritage found in Baikonur museums fostered certain prominent cultural narratives of the glorification of the Soviet Union.

Spectral geographies pertain to examining how haunting manifests troubling presences through memories, materials, and landscapes (McCormack, 2010). Spectrality was not only a question of atmospherics at Baikonur—but its future is experienced by tourism stakeholders interviewed as a haunting, similar to Fishers' (2012, p. 16) 'hauntological confluence of its confrontation with a cultural impasse: the failure of the future.' The intermediary of ghosts influences at present, conditioning visitor expectations and motivating cultural production of memories through decayed buildings. These perceived haunted places of decayed buildings and remains of space heritage reinforced experiences of authenticity of the Soviet times and current geopolitical tensions.

The commodification of sites related to space heritage needs to be problematized through a wider tourism agenda in which feelings of decayed and abandoned buildings are fully acknowledged as an integral part of the tourism experience. Baikonur remains a place of global memory from which the first man in space was launched; an important

cultural legacy, independently from the question as to whom this site belongs to (Russia or Kazakhstan). Presence and absence of the heroes of the Soviet Union who made the space odyssey possible renders a problematic selective interpretation of the past (Lennon & Tiberghien, 2020, 2022; Walby & Piché, 2011). At present, government responses to memorialization and development of Baikonur varies, with no accessible archive and decaying buildings and museums. Therefore, the existence of museums in original space heritage sites raises questions about the need for a transparent historical perspective on interpretation and education at Baikonur to inform contemporary understandings of space heritage for local communities and visitors.

This study galvanises the policy debate of the role of space heritage in the post-Soviet region. Preserving tangible and intangible assets through the commodification of the past Soviet space heritage in Baikonur necessitates a multi-stakeholder approach to the development of the site. The preservation of the space architecture, buildings and traditions inherited from the Soviet Union of the world's largest cosmodrome could be a source of income with high potential (Schreiber, 2008). With the tangible and intangible space heritage going very much hand in hand, a great majority of informants point out to the need for 'keeping the traditions alive' in Baikonur, those traditions that contributed to the success of the first manned space expeditions; but also, to the authenticity and uniqueness of the tourism experiences. Experiential activities such as going inside a "Buran" space shuttle in the vicinity of the operating launch pads contributed to the perceived authenticity of Baikonur facilities. This living heritage of Baikonur co-exists with some spectral aspects of the ghost towns, such as the abandoned buildings of Baikonur city and the numerous decaying operational buildings around Gagarin's start launch pad.

Marov (2010) suggests that space heritage is complex in terms of attributes of value as they produce various legacies and give rise to both tangible and intangible heritage. As part of our human heritage, space heritage at Baikonur could become 'a mere curiosity for tourists and not become simply a museum of Gagarin's achievements, but the springboard for future human conquests' (Villain, 1996, pp. 138-139). Special attention should be given to tangible immovable heritage such as cosmodromes and overall space infrastructure that ensured the successful launches of spacecrafts, including the complex ensemble of buildings, infrastructures, facilities, technical innovation and applied science. A systemic approach for the protection of the complexity of such heritage should be prioritised, one that considers the fact that Baikonur is currently under a Russian-Kazakhstani joint jurisdiction, an element that could change in the face of political landscape and influence of Russia in the central Asian region. For the governmental agency *Kazakh Tourism*, the development of space heritage in Kazakhstan requires a clear governmental tourism policy to support the potential of space heritage tourism in the country. The tangible and intangible aspects of Baikonur space heritage are part of the country's unique industrial heritage. The industrial patrimony of the space heritage at Baikonur can be used as a vector for future heritage tourism development in Kazakhstan.

With the potential return of visitors to Baikonur post-Covid crisis (Nomadic Travel Kazakhstan, 2022), the reconversion and transformation of Baikonur dilapidated buildings and facilities raise a number of questions in terms of the interpretation and representation of space collective memory within the Baikonur Russian enclave in Kazakhstan. The commodification and interpretation of the past also raises questions of economic and territorial

development, and even reconciliation and social cohesion with surrounding landscapes and communities that live in and around Baikonur. For tourism stakeholders involved in the preservation of the Baikonur cosmodrome, the desolated parts of the city and remaining of the Soviet programme among the landscapes become an evoked signifier of a nostalgic remembered past. The core and perceived as authentic tourism products such as the excursion to the Baikonur museums, the memorial houses of Korolev and Gagarin, the orbital space shuttle “Buran” could be highlighted as the region’s iconic space heritage. These core space heritage tourism products that have already been developed *in situ* would need to include the specific perceived intangible and atmospheric ‘spectrality’ of the environment and other facilities surrounding the site so as to offer more authentic, immersive and meaningful space heritage tourism experiences.

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