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THE UNCOMMON CONVERSATION: A GRASSROOTS APPROACH TO DECOLONIAL PRACTICES IN SPACE

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Abstract

Upon entering the space sector, the colonial roots driving this industry were quickly recognised. As advocates of decolonial theory and activism, we swiftly fell into conversation, acknowledging the imperative to decolonise space practices for a safer future, on Earth and beyond.

Western colonialism actively perpetuates harmful practices, enforcing notions of cultural supremacy detrimental to people and environments. Dismantling colonial legacies, internally and externally, is crucial. As an industry riddled in exploitative narratives, Space is no exception.

Combining our backgrounds in astrophysics (Casey Domingo) and anthropology (Harriet Hurley), we embarked on developing the (Un)Common Cosmos project. Our aim is to amplify marginalised perspectives on space exploration and connection to Space. By creating a platform for First Nations voices and decolonial movements that are uncommon to that of the space industry. To create a common conversation that focuses on decolonising space and enhancing the industry's cultural competency.

The project presently prioritises outreach and education, employing interactive workshops, film screenings, and artistic expressions. These initiatives cater to both industry and public audiences, offering immersive experiences that delve into the influence of cultural narratives on space endeavours. By fostering critical inquiry, we can reframe and improve the most concerning elements of space-related activities. This is achieved in two parts:

Part One: Unveiling Colonial Narratives in The Space Industry This workshop delves into the colonial roots underlying the space industry, emphasising its constructed nature and the potential for deconstruction. Through reflexive discussions and activities, we confront challenges spanning environmental, political, social, and philosophical realms. Our aim is to equip participants with the awareness and tools to address these issues, whilst highlighting realities and perspectives that are widely overlooked and unaccounted for.

Part Two: Imaginative Space Futures This workshop revolves around space futurism and collectively envisioning the future of human exploration in space. Drawing inspiration from futurist movements like Afrofuturism and solar-punk, participants utilise imaginative methods to craft collective future projections, challenging existing paradigms and fostering innovative thinking. Our approach is distinctively grassroots, with practices and theories co-created and validated by the community—a bottom-up methodology. We prioritise tools and empowered learning. By informing the public and industry, we equip individuals to hold industry accountable, fostering a culture of transparency and responsibility for all of Space.

1. Introduction

What happens in space does not just concern those sending rockets, controlling satellites and probing celestial bodies. Space exploration and practices concern all of humanity and all on Earth. Humanity has shared a profound and evolving connection with space throughout time. This connection varies widely across different cultures, reflecting a rich tapestry of interaction and understanding that cannot be homogenised. Yet, despite this shared relationship, the dominant narrative in the space industry has historically been shaped by Western perspectives, often influenced by imperialist ambitions and colonial frameworks.

The space sector is experiencing rapid growth. Now more than ever, it is crucial to reassess how we approach space exploration and conduct space-related activities. It is important that the space industry reflects the diverse relationships that exist with space here on Earth. Moving forward, we must foster greater cross-cultural engagement and ensure that space practices are developed by a broader range of perspectives, beyond the confines of Western imperialist narratives.

(Un)Common Cosmos is a grassroots initiative dedicated to fostering collective awareness and empowering diverse communities to have an active role in shaping space practices. Our mission is to amplify marginalised perspectives on space exploration and connection to the cosmos, centring Indigenous voices and decolonial movements that are currently uncommon in the space industry.

This paper contends that the space industry is fraught with imperialist and colonial Western rhetoric and structures that influence how we conceptualise space and pursue exploration. It explores the theoretical and practical approaches that inform (Un)Common Cosmos in our effort to decolonise the space industry. Calling for the decolonisation of space requires a recognition of these narratives and practices, their harmful and alienating nature, and shifting away from centring colonial endeavours.

Nicola Triscott [1] In her piece ‘Other Worlds, Other Views: Contemporary Artists and Space Exploration’ states:

“Decolonisation refers to the process of deconstructing and offering alternatives to colonial ideologies of the superiority of Western thought and approaches that permeate institutions and systems, which is now being applied to space”. (p. 122).

We aim to foster shared dialogue that focuses on decolonising space and enhancing the industry’s cultural competency by advocating and creating

space for these critical conversations. The recognition of the communities directly impacted by space practices is central to this effort. To achieve this, (Un)Common Cosmos is informed by 3 main pillars:

1. Deconstructing and Decolonising space narratives, mindsets and practices.
2. Increasing the cultural competency of the space industry, informed by Indigenous Knowledges and Voices.
3. Imagining space futures through multidisciplinary approaches of collective imagining that are culturally collaborative and diverse.

The paper is structured to allow for the story of (Un)Common Cosmos to build through the piece, showcasing the ground on which (Un)Common Cosmos stands. It is designed to unfold the story and philosophy behind (Un)Common Cosmos, offering insight into the reasoning and methods that drive our mission.

This is done in three sections:

1. Context to the emergence of (Un)Common Cosmos.
2. The theoretical grounding of (Un)Common Cosmos.
3. The practical approaches that are taken by (Un)Common Cosmos.

While presented separately, these sections are deeply interconnected, reflecting the integrated nature of our work.

The emergence section will contextualise the origins and background of (Un)Common Cosmos, detailing how the collective began and a self-reflexive statement about us. This will then delve into some key issues within the space industry which has influenced the emergence of (Un)Common Cosmos.

The theoretical grounding will include an overview of frameworks and key literature that has inspired and informed the work of (Un)Common Cosmos.

The practical approaches will outline what (Un)Common Cosmos has accomplished so far and its plans for future initiatives. This section outlines our community workshops and proposes workshops for industry that are aimed at decolonising space and fostering more culturally competent organisations and space sector.

2. Emergence of (Un)Common Cosmos

This section begins by introducing the founders of (Un)Common Cosmos and providing context for our emergence. We will then explore this context in more depth by outlining key issues we've observed in the space industry, including the coloniality of space that alienates Indigenous peoples, the ongoing practices of resource extraction such as mining, and the escalating problem of space pollution.

By examining these issues, this section highlights the Western cultural hegemony in the space industry, and concludes with a strong call for the urgent need to diversify and decolonise space.

It is crucial to note that the space industry has deep ties to militarisation, reflecting its imperialist origins. Emerging from the space race—a nationalist military project—space and defence have been closely linked. Today, satellites serve as vital instruments of war, making it increasingly difficult to separate the space industry from the atrocities of ongoing conflicts and genocides. Space technology has thus become a tool of oppression. While this militarisation is a significant issue, it is already well-explored elsewhere. Instead, this paper will focus on lesser spoken to challenges within the space industry that also warrant attention.

2.1 Founders of (Un)Common Cosmos

(Un)Common Cosmos is a collective founded by Casey Domingo and Harriet Hurley. It has emerged from a multidisciplinary approach, informed by astrophysics (Casey) and anthropology (Harriet). Casey and Harriet are both advocates for decolonial theory and activism within our individual research and participation in community projects. This is greatly informed by the discourse and movement for Indigenous rights and sovereignty within the colonial state of Australia. We both were born and raised in Australia, however we are of mixed cultural heritage. Casey is of Filipina and Scottish ancestry and Harriet is of English, Irish, and Māori ancestry.

Like many people within the industry, and people in general, we are passionate and inspired by space. This has brought us to work within the sector. However, much of what is envisioned and executed by governments and corporations regarding space, is not reflective of our own, and many others, connection and visions of space.

As the founders, it is not our intention to dictate what space exploration should encompass. Rather, we focus on recognising the current limitations of

the space industry, advocating for greater intercultural dialogue, and fostering collaborative, multidisciplinary processes that allow broader community recognition and agency in space practices. Drawing from our expertise in astrophysics and space anthropology, we provide insights, conduct research, and engage with the public to educate and learn together, advancing a more diverse and ethical future for the space industry.

It is important to also recognise that as a community orientated project that is engaged in collaborative processes, there is and will be dynamic and various involvement in the collective. Including people within the space industry and those who have limited exposure to the operations of the industry. Reflecting the reality that everyone is connected to space.

2.2 Key Issues in the Space Industry

2.2.1 Colonial Perspectives of Space

As many continue to experience and endure the ongoing violence of colonialism on Earth, space is increasingly seen as the 'next frontier' where these same injustices can—and are—being reproduced.

The drive to extract off-Earth resources, occupy Earth's orbit, and physically colonise outer space reflects a view of space as the next 'frontier' for imperialistic expansion. This is commonly justified through a perception of space as separate to Earth and largely lifeless 'as we know it.' Space is often perceived as an unknown realm, rich with prospects—whether for status, scientific development, economic gain, or the establishment of new colonies. However, this is not a universal view. Rather, it is the perspective of a few that has become the dominant. Many Indigenous cultures, and cultures more broadly, see space as deeply connected to Earth. For many Indigenous cultures in Australia the sky reflects all that exists on land and in the water [2,3,4]. Even the mere framing of space as "outer space" reflects a colonial mindset as it implies a separation between Earth and space, as if they are distinct realms. This distinction disregards Indigenous understandings of the universe. This is detailed by the Bawaka Country group [5]:

"Country includes lands, seas, waters, rocks, animals, winds and all the beings that exist in and make up a place, including people. It also embraces the stars, moon, Milky Way, solar winds and storms, and intergalactic plasma. Land, Sea and Sky Country are all connected, so there is no

such thing as 'outer space' or 'outer Country'—no outside. What we do in one part of Country affects all others" (p. 2).

The stars and celestial objects are integral to many Indigenous cultures—central to identity, knowledge, ceremony, lore, kinship systems, food economies, navigation, and much more [3,4,6]. However, connection to the sky is being continuously severed by various practices of the space industry. This is evident in the thousands of satellites launched into orbit annually, the occupation and desecration of Indigenous lands for space facilities, and the threat of extracting resources and damaging celestial bodies. Despite this impact, the majority of the global population, especially Indigenous communities, are not being consulted in space related endeavours [2].

This raises the question: what right do we have to occupy, exploit, and control space in the ways that many nations and corporations do, and intend to?

In response to such space practices, Noon et al. [2] introduces the term 'sphaera nullius', which draws on the concept of 'terra nullius'. Terra nullius was a legal term, meaning 'land belonging to no one' used by the British Crown to justify the colonisation of Australia. The term 'sphaera nullius' suggests that outer space belongs to no one. However, 'terra nullius' was a fabrication by the British Crown to legitimise their claim to Indigenous lands. Declaring space as 'sphaera nullius' runs the risk of justifying the exploitation and pollution of space on the basis it belongs to no one, ignoring Indigenous connection to Sky. As Noon et al. [2] explains:

"For many Indigenous peoples and communities, the colonisation of space is a continuation of the colonisation of their lands."

Categorising space as something that belongs to no one, and thus free for the taking by whoever can colonise it first, is a misguided perception. To reiterate, all cultures share a profound connection to space; it belongs to everyone, meaning no one has the right to claim it for themselves. Therefore, no one has the right over any other to colonise it. This mindset entrenches systems of oppression and increases disadvantage, as those in power capitalise on the 'opportunity' while those without the means or desire pay the price."

Furthermore, It is important to acknowledge that the language of the space industry is very colonial. As Triscott [1] states:

"The five-hundred-year-old language of colonialism—"colonising Mars", "conquering space", "the final frontier"—has long been part of

the space exploration community's rhetoric around human spaceflight, and continues to be used uncritically" (p. 122).

Phrases like "colonise Mars" or "colonise the Moon" inherently alienate populations who have experienced colonisation. Using language tied to systems that have caused immense devastation and attempted to erase Indigenous cultures is not only exclusionary but also deeply negligent. Moreover, as Noon et al. (2023) notes, the concept of 'sphaera nullius' is false. The argument that there is no life or Indigenous peoples to colonise in space dismisses Indigenous, and other cultural, ways of knowing the universe. Bawaka Country Group [1] argues that the space industry's current destructive practices—including pollution, extraction, and domination—constitute *"an ongoing colonisation of plural lifeworlds."* (p. 1)

There is growing concern, validated by the current trajectory of the space industry, that space will be irreversibly harmed. At this rate, only a few companies and nations will be responsible for this damage, but the consequences will affect everyone—not just humans, but all life on Earth

2.2.2 Space: Just Another Resource

A prominent example of the space industry's imperialist tendencies is the ongoing discussion of mining the Moon. There is a competitive race among companies and nations to develop the technology and infrastructure to mine lunar regolith. NASA has called it *'The Lunar Gold Rush'*, [7] with great excitement surrounding the potential wealth and significance of such an achievement. However, this notion of achievement is deeply tied to profit, with little regard for the detrimental environmental and social consequences that mining has inflicted on Earth under a colonial, capitalist system. Capitalism's model of infinite resources and surplus capital often comes at the cost of exploitation and environmental degradation.

The resource paradox illustrates a critical issue of mining within capitalism. This paradox refers to the phenomenon where countries rich in natural resources are often among the poorest. A striking example is the Democratic Republic of Congo (DRC), which supplies significant quantities of lithium, copper, cobalt, and tantalum—key materials for modern technologies like smartphones, laptops, electric vehicles, batteries, satellites, and rockets. Despite this wealth of resources, the DRC is one of the poorest nations, enduring extreme poverty, environmental degradation, child labour, and a health crisis. This paradox is a direct consequence of colonial exploitation.

Some argue that given the severe conditions of mining on Earth, as seen in the DRC, it might be more ethical to mine the Moon. This argument assumes that lunar mining would have lower environmental and social impact. However, what is needed to reach the Moon and conduct mining operations? It requires the same rare minerals, perpetuating the same exploitative supply chains. Additionally, what right do those who dominate the space industry have to mine the Moon—a celestial body that governs life on Earth and holds cultural significance for many people across the globe?

The race to mine the Moon echoes the Space Race of the Cold War. Although there are now more players—international agencies, corporations, and startups—the underlying motivation remains similar: a pursuit to be the first to control and profit from the Moon, irrespective of global opinion. Like its predecessor, this race is heavily militarised and driven by power.

2.2.3 Polluting Our Space

In the race—to have a foot, probe, or satellite in space—we are encountering a similar issue to what we face on Earth: pollution. Earth's orbit has become overcrowded with satellites, and our society has become increasingly dependent on them. We have built a society that is reliant on these satellites mediating how we communicate and relate in the modern age. Simultaneously, we are grappling with the harmful effects of increasing orbital pollution, which significantly impairs our ability to observe the night sky. This is particularly detrimental for Indigenous peoples and for both professional and amateur astronomers.

As already emphasised, Indigenous connection to space is profound and necessary. The ability to see the stars is essential to everyday practices and cultural continuity [3,4,6]. The increasing elimination of the night sky - caused by on Earth light pollution and satellite glow - is an interruption to Indigenous connection to Sky, and as Hamacher et al. [8] states is a "*form of ongoing cultural and ecological genocide*" (p. 1).

There is no end in sight to the pollution of space, with more satellites being launched into orbit every year with even more being planned. This pollution extends beyond space, as it is intertwined with ongoing pollution on Earth. The rise in satellites means the increase of rocket launches, which have devastating ecological and cultural impacts (see Domingo & Hurley 2024).

2.2.4 Western Cultural Hegemony of Space

Examining evidence of imperialist, colonial, and capitalist structures within the space industry highlights the Western cultural hegemony that shapes our understanding of space. Cultural hegemony refers to how the cultural norms—values, beliefs, perceptions, and practices—of a diverse society are shaped and dictated by the ruling class [9]. Therefore, what is considered as the cultural norms of a society is not reflective of the cultural diversity of that society but rather just the ruling class. The dominance of Western hegemony in space is evident in how these Western perspectives on understanding and relating to space have become the accepted norm. This influence includes conceptions and practices relating to space technology, science, and research, but also how people envision and relate to space.

2.2.5 Diversify & Decolonise

Understanding the colonial structures embedded in and dominating the space industry highlights the urgent need for greater cultural diversity. Embracing and celebrating diverse cultural perspectives and connections to space is essential for fostering inclusivity within the field.

It is important to emphasise that non-Western countries and cultures are indeed contributing to the space sector. However, their narratives are often excluded from the broader story of space exploration. As Mukesh Chiman Bhatt [10] highlights in his essay *Space from Āfār*,

"The Global South is clearly contributing to the exploration of space and deserves to be written into the discussion" (p. 45)

Humanity is diverse, yet we all share the same home—on Earth, within space. To prevent the disruption of cultural connections and the pollution of space, the space industry must undergo a process of decolonisation. This involves moving away from centering Western narratives as the sole legitimate perspective on space exploration.

3. Theoretical Grounding

(Un)Common Cosmos is informed by multidisciplinary engagement, community experience, and is theoretically grounded in decolonial methodology and literature regarding space practices. The literature is limited, yet over the recent years it is expanding as more people witness and experience the destructive and alienating nature of the space industry. This section will provide an overview of the main themes and associated literature that is useful in understanding the theoretical foundations of (Un)Common Cosmos' motives and approaches.

(Un)Common Cosmos does not fix itself to a static understanding of a theoretical grounding. Rather it is a collective built upon collaborative processes that are fluid, tangible and intangible in its development and forms of production. Central to this is also the recognition that learning is an ever evolving process. We aim to engage in diverse and collaborative processes in which the community has the opportunity to learn together. In turn, enabling embodied, informal and experimental approaches to learning and creating to develop and understand diverse and new ways of engaging in space exploration.

Therefore, the literature that will be highlighted and drawn upon within this section is not intended to bind (Un)Common Cosmos or reproduce institutional pedagogical approaches to learning and research. Rather, it is to recognise and pay homage to those that have inspired and informed (Un)Common Cosmos by bravely critiquing and putting forward their insights, research, and experiences into making the space industry a more diverse and culturally considered industry. Notably *Reclaiming Space: progressive and multicultural visions of space exploration* [11], *The Routledge Handbook of Social Studies of Outer Space* [12], and *First Knowledges: Sky Country* [3], has greatly informed and influenced the work of (Un)Common Cosmos and the movement towards decolonial space practices.

3.1 Indigenous Inclusion

In the effort to diversify and decolonise the space sector, it is essential to acknowledge and include Indigenous voices. Indigenous people are continuously subjugated by the colonial systems that exist in many countries and this is not bound to just Earth. It is also important to recognise the diversity of Indigenous cultures throughout the world and as well in each country. As Linda Tuhiwai Smith [13] notes:

"The term 'Indigenous' is problematic as it appears to collectivise many distinct populations whose experience under imperialism have been vastly different", (p.6).

Although (Un)Common Cosmos is an international project, majority of the work that takes place is done in so-called 'Australia' on the unceded lands of the Wurundjeri People of the Kulin Nation. Indigenous perspectives and voices on space practices and connection to Sky, is integral to understanding the colonial devices within the industry, and building a more culturally competent sector. It is important for those in the space sector to take the time to engage with Indigenous perspectives on space. More critically, fostering greater Indigenous inclusivity within the industry is essential—not by expecting Indigenous people to assimilate into existing space narratives, but by embracing and encouraging Indigenous views and contributions.

3.2 Cultural Competence

In developing a framework for what a more "culturally competent" space industry could look like, Carla Bento Guede's [14] thesis, 'Exploring Cultural Competence for Astronomers', offers valuable insights. Guede argues that by integrating greater intercultural collaboration and understanding between Western astronomers and Indigenous peoples, astronomy projects can become more inclusive and mutually beneficial.

Guede compares two case studies that highlight the cultural intersections between Western astronomy and Indigenous groups: the Thirty Meter Telescope (TMT) project proposed in Hawai'i and the Square Kilometre Array (SKA) project in Australia and South Africa. She shows how projects like the TMT have failed to be culturally competent, resulting in significant harm to Indigenous Hawaiians, as the sacred mountain Mauna Kea has been desecrated to establish telescope infrastructure. In contrast, the SKA project has been deemed culturally competent, with ongoing, meaningful collaboration between Western astronomers, organisations and local Indigenous peoples.

Drawing on these case studies, Guede defines cultural competence as follows:

"Cultural competence is a perspective and/or concept to be applied as a tool for effective intervention, improving communication, conflict resolution, and outcomes in a multicultural work

environment, rather than a 'theory' in the classical sense" (p. 33).

Through this work, she establishes the 'Model of Indigenous Cultural Competence for Astronomers' (MICCA). MICCA is an action-oriented framework that calls for a paradigm shift among Western astronomers. This model emphasises the importance of incorporating cultural sensitivity, knowledge, and resources when engaging with Indigenous communities and developing astronomical projects.

The need for increasing cultural competency in astronomy extends to the broader space industry. Guede observes:

"The dominant discourses in astronomy have been situated in the Western experience. Western astronomers have constructed and controlled most dimensions of astronomy, from the interpretation and presentation of the sky, to funding and participation in scientific research" (p. 5).

As previously discussed, this domination of Western perspectives in shaping and controlling space practices and exploration is evident. Guede's work offers a framework for fostering more inclusive, intercultural collaboration in the development and implementation of space activities.

3.3 Reclaiming Space

At the inception of (Un)Common Cosmos, the book *Reclaiming Space: progressive and multicultural visions of space exploration* was published [11]. Edited by Jamie S.J. Schwartz, Linda Billings and Erika Nesvold, *Reclaiming Space* is a collection of essays, expressing alternative perspectives and challenges of the contemporary forms in which space exploration is narrativized and carried out. Within the book, there is an overarching consensus that the space industry is dominated by the perspectives of white, male, able-bodied, and libertarian people and more broadly what the editors have deemed as W.E.I.R.D—Western, educated, industrialised, rich and democratic. The extensive—yet as noted not all encompassing—assemblage of stories and perspectives is a timely analysis and call to diversifying the space sector.

(Un)Common Cosmos resonates with the editors who state:

"This book is more about methodology than it is about ideology... less a book about what you should believe about space exploration and

more a book about how you can learn to think more critically and responsibly about space exploration." (p. 4).

Similarly, (Un)Common Cosmos is not a project that aims to tell people, or the industry, what space exploration should look like. Rather, it aims to highlight the diverse perspectives, connections and understandings of space exploration beyond this status quo and to have these perspectives included within the visioning, decisions and conversations surrounding space

The contributors of *Reclaiming Space* explore a myriad of existing problematic paradigms that currently—and historically have—defined our relationship to space exploration. This includes an analysis of the imperialist and racist origins of space flight [15], the patriarchal nature of the industry [16], an analysis of extraterrestrial environmental concern [17], labour rights and resource extraction [18, 19] inclusivity of disabled people [20], envisioning diverse space futures [21, 22, 23] and much more.

3.4 Imagination

A fundamental aspect of (Un)Common Cosmos is recognising and encouraging imagination in aiding the creation of more ethical and diverse space practices. We believe that a key aspect to creating change within the space industry lies in our ability to imagine alternative space futures that can help us to re-understand our relationship to space.

The dominant structures that shape much of the world—such as economics, racism, and patriarchy—are forms of human creations, born out of imagination. We mistakenly take many of our structures and institutions for granted, as something that is natural and innate to the world. In reality, they are inventions of the imagination made to be 'real' in the collective through collective acceptance of 'norms'. To decolonise space, we must learn to imagine beyond the confines of imperialism, colonialism, and capitalism—collectively and individually. This is crucial as we work to deconstruct the colonial and Western frameworks that dominate the space industry while simultaneously learning how to reconstruct it. This process requires cultural collaboration and the collective ability to envision new futures in space.

Notably, Ingrid LaFleurs [21] essay 'Sacred Space: Decolonisation through the Afrofuture', offers an insightful call to decolonising space exploration by drawing upon our imagination of the future. This future is one through an Afrofuturist lens and practice, which is a multidisciplinary cultural

movement that envisions alternative futures in which black people are liberated, [24] LaFleur [21] states:

"By revisiting African precolonial and ancient past relationships to space we can imagine and investigate new possibilities that will not continue the systems of harm we perpetuate here on Earth" (p. 151).

Drawing inspiration from LaFleur, we recognise the importance of different cultural connections and therefore, visions of space in building new worlds. Central to this is also the role of art. Science fiction has long inspired us and been taking us to space. The first recognised novel of human space travel 'A True History', was written by Syrian author Lucian of Samosata in 2nd century AD. Since then, countless influential science fiction stories have transported us to space, inspiring modern technologies and capabilities that enable humans to tentatively inhabit space and rovers to explore the solar system

3.5 Grassroots

These questions and frameworks offer guidance for the epistemological and pragmatic modes in which (Un)Common Cosmos has taken in being a grassroots initiative. Grassroots is a bottom up methodology in which the community—and in this case those outside of the space industry.

(Un)Common Cosmos envisions that being able to learn and help educate the community about space practices that ultimately impact everyone, will in turn, create greater community agency and incorporation in determining space practices. Furthermore, by being a platform for community and marginalised voices within the industry, organisations will not only hear but will be encouraged to consider and take a more collaborative approach with communities.

4. (Un)Common Cosmos in Practice

Developing practices of community engagement and collaboration for (Un)Common Cosmos, is process driven, relational and experimental. The term 'process' is important. It highlights ongoing engagement and development that is variable and dynamic in nature. Just as colonisation is not a historical event, but rather an ongoing systemic operation, decolonisation is, and will not be, a singular event. Rather, it is a process of continuous deconstruction and reconstruction. These processes are relational and multifaceted, contingent on

developing relationships, conversations and practices collaboratively.

Although, majority of the public work that has taken place is through the form of workshops, we are not limited by these means. (Un)Common Cosmos intends to create and facilitate community events beyond what could be considered as mostly 'informational' outreach. We aim to share through alternative mediums such as film screenings, night walks, stargazing, reading groups and collaborations with artists and researchers. Through experimental and varied practices, we hope to help people to consciously connect with space and feel empowered to assert their right to their connection. Central to this is a recognition that space related activities and conversations do not have to be, and should not be, something the public aren't a part of.

(Un)Common Cosmos so far has focused on community engagement through publicly accessible workshops and talks. We've held multiple informal workshops in Naarm/Melbourne, Australia in community centres, incorporating mixed methods and interactive elements. These sessions are designed to be inclusive, welcoming participants of all experience levels—from beginners to space experts.

We believe that everyone has a deep connection to space and the right to understand the industry's practices. Our workshops encourage participants to reflect on and strengthen their personal connection to space while offering insights into how companies and governments shape the public's relationship with it.

4.1 General Space Workshops

Our general workshops aim to provide participants with a foundational understanding of the space industry and to ignite interest in space-related topics. Central to this is exploring our individual and collective relationship with space, and acknowledging the role space plays in our daily lives—socially, culturally and technologically.

We facilitate discussions and encourage reflections throughout the workshops. This is important as it allows people to contribute, ask questions and offer insights.

The structure of these workshops changes depending on the context, including the environment and demographic. However, the basic structure of the workshop is as follows:

Outline of Workshop:

Introduction:

- Context of who we are and an overview of (Un)Common Cosmos and its emergence.
- Invitation for participants to reflect on their personal connections to space through thinking, writing, or talking, with an option to share insights.

Modern Society's Relationship with Space:

- Overview of modern societies reliance on space e.g. satellites services, telecommunications and medicine development.

Space Industry Overview:

- History and evolution into 'New Space.'
- Key players and commercial aspects.
- Technological advancements and future goals.
- Examination of dominant narratives that surround space, historically and currently.

An Exploration of Challenging Aspects of Space:

- Space junk.
- Militarisation of space.
- Space mining.
- Environmental and cultural impacts of rocket launches.
- Space tourism.
- Space exploration.
- Colonisation of Mars and the Moon.



Figure 1. Casey Domingo and Harriet Hurley running the general workshop at Black Spark Arts & Cultural Centre

4.2 Futurist Imagination Workshops

This workshop aims to empower participants in imagining futures that are aligned with what they wish and care for. Drawing upon the pillars and contextualised importance of imagination, this

workshop invites participants to explore possible futures.

So far we have been running this workshop as part of a series with our general workshop. This has been done for two reasons:

1. Allowing people to build knowledge in understanding the nature of the space industry and their own interest before thinking about alternatives.

2. Establishing an understanding of what narratives surround space, and how norms have been constructed and therefore can be reconstructed.

This workshop incorporates creative elements and practice, to help encourage people to imagine creatively. Through forms of play and improvised expression, we believe that people are able to more tangibly engage in thinking beyond the norms and structures that exist on Earth.

Drawing upon the role that art and science fiction has played in space exploration, futurist genres offer an expansive and multifaceted guidance in aiding our imagination. Afrofuturism and Solar Punk are two main genres that we explore in our workshops. An examination of the cultural, political and artistic elements of these genres offers forms of visionary inspiration to help guide participants.

Outline of Workshop:

Imagination Activity:

- This is a creative activity where participants create a being out of clay and other objects.

Discussion:

- Why is imagination important? What role does it play?

Off-Earth Colonisation:

- Exploring the concept, and current visions.

Space Futures:

- What do we envision for the future of space? What do we want it to look like?

Introduction to Futurist Genres:

- Drawing upon the examples of Afrofuturism and Solar punk as potential visionary guides for our space futures and imagining society differently.

Reflection:

- Space as a canvas for imagining life beyond Earth's existing structures.



Figure 2. Imagination workshop at Black Spark Arts & Cultural Centre

4.3 Dark & Quiet Skies

This workshop explores the impact of light pollution and satellite glow on dark skies, and our fading ability to see the stars. Within this workshop we reflect on our own connection to the night sky. Much of the world's population lives under skyglow, meaning many of us are unable to see the cosmos. Most people live in urban areas where fewer than 200 stars are visible, yet there remains a profound connection to the cosmos. While such moments of experiencing the vast beauty of the night sky are becoming increasingly rare, they often leave a lasting impression.

In this workshop, we emphasise the fundamental role that viewing the night sky plays in many cultures, particularly within Indigenous cultures. As previously mentioned, for many Indigenous people the night sky is not separate from us and is a reflection of the Land, revealing seasonal changes and patterns within the ecosystem. The stars guide many Indigenous cultures in determining the optimal times for planting and harvesting, tracking animal breeding and migration, knowing when to hunt, understanding weather patterns, and timing cultural ceremonies [3, 4, 6].

This workshop offers insight into differing cultural relations with sky and the importance of preserving dark skies.

Outline of Workshop:

Introduction:

- Begin with stars projected on the ceiling and walls if indoors.
- An introductory acknowledgment of the sky and country. This includes sharing a personal cultural connection to space

Overview of Light Pollution:

- Explain light pollution and its contributors, such as artificial lights and satellite glow.

Impacts of Light Pollution:

- **Astronomy:** Effects on the field of astronomy.
- **Ecological:** Impact on biodiversity and ecosystems.
- **Cultural:** Detrimental effects on cultural practices and contribution to cultural erosion.

Mitigation Strategies:

- Discuss how individuals and communities can help reduce light pollution.



Figure 3. Harriet Hurley facilitating the Dark & Quiet Skies Workshop at Black Spark Arts & Cultural Centre

4.4 Workshop Reflection

We have observed significant interest and curiosity from the public about our workshops. Many participants have expressed surprise at their lack of

awareness regarding various space practices and their dependence on space technologies. We've found that the general public often lacks knowledge about modern space practices and their personal connections to them. By engaging with and educating people, we have not only sparked interest but also supported their inherent curiosity about space. This interest is frequently dampened by a societal disconnect from space, perpetuated by the space industry's often gate-kept nature.

4.5 Bridging Community & Industry

The insights we have gained from our positions and running these workshops is that there is a big separation between the space industry and the public. There is a disconnection between what happens in the industry and public awareness. Much of the rhetoric surrounding space exploration centres on an idea that it is "for all of humanity", yet that is challenged when much of the population is not consulted in this process.

There also seems to be a dissociation between the industries perception of the public view on space, and the public's view on space.

To minimise this separation and create greater dialogue between sector and public, and for the industry to increase its cultural competency, there must be a shift that takes place within. This must include a willingness to recognise the colonial roots of the space industry, the importance for cultural diversity and engaging with the community. In order to help achieve this, we suggest a two part workshop series for organisations and industry professionals.

These workshops are designed to be run within the industry to help foster greater cultural competency. These workshops are not enough to make the space industry culturally competent. As Guedes [14] highlights, increasing cultural competency is an ongoing process of engagement, learning, reflection and collaboration. However, these workshops will help to facilitate this process and have been designed as a place to start.

Part One: Unveiling Colonial Narratives in The Space Industry

This workshop delves into the colonial roots underlying the space industry, emphasising its constructed nature and the potential for deconstruction. Through reflexive discussions and activities, we confront challenges spanning environmental, political, social, and philosophical realms. Our aim is to equip participants with the awareness and tools to address these issues, whilst highlighting realities and perspectives that are widely overlooked and unaccounted for.

Part Two: Imaginative Space Futures

This workshop involves thinking critically and creatively about space futurism and collectively envisioning the future of human exploration in space. Drawing inspiration from art and futurist movements like Afrofuturism, participants utilise imaginative methods to craft collective future projections, challenging existing paradigms and fostering innovative thinking.

Conclusion

Recognising and examining the imperialist undertones and colonial narratives embedded within the space industry, reveals the urgent need for decolonisation. (Un)Common Cosmos has emerged as a grassroots initiative dedicated to this effort, focusing on community engagement and amplifying the voices of Indigenous peoples and marginalised communities affected by the industry. Through this approach, we aim to foster more diverse perspectives and help to reshape the space industry.

There must be a greater awareness, analysis, and critique of the destructive narratives and practices that currently drive the space industry, addressing this need at international, organisational, and individual levels.

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