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The Cosmic Anthropocene and Planetary Vulnerability in Samantha Harvey's *Orbital*: A Reader's Perspective

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ABSTRACT

This paper examines how human consciousness confronts ecological fragility in Samantha Harvey's Booker Prize-winning novel Orbital (2023). Structured across sixteen orbits of the International Space Station during a single twenty-four-hour cycle, the narrative balances the quiet detachment of low Earth orbit against the urgency of terrestrial climate instability. Reading the novel through an ecocritical and reader-response lens, this study traces how six crew members—Chie, Shaun, Pietro, Nell, Anton, and Roman—interpret changing weather systems, invisible national borders, and a gathering super-typhoon moving toward the Philippines. Engaging recent scholarship on the cosmic sublime and narrative temporality alongside Lawrence Buell's notion of the environmental imagination and Denis Cosgrove's account of the 'Apollonian eye,' the paper shows how Harvey turns orbital observation from an emblem of technological mastery into a practice of ecological humility. Ultimately, the essay argues that Harvey's prose privileges planetary kinship over political division, inviting readers to recognize the shared vulnerability of life in the Anthropocene.

1. Introduction

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Samantha Harvey's *Orbital* (2023) reimagines contemporary ecological fiction by shifting the narrative vantage point two hundred and fifty miles above the Earth's surface. Rather than building momentum through conventional plot twists, the novel unfolds across a single twenty-four-hour period aboard an international space station, recording sixteen sunrises and sixteen sunsets as six astronauts and cosmonauts circle the planet. Within this tight temporal frame, Harvey gathers urgent questions about anthropogenic climate disruption, national borders, existential solitude, and personal grief. Recent scholarship has begun to examine how the novel's compressed structure shapes its environmental ethics, noting that the collision between terrestrial clock time and accelerated orbital time defamiliarizes human history and sharpens awareness of planetary fragility (Diani, 2026). Yet an equally vital, though often quieter, dimension of *Orbital* lies in how its characters negotiate their day-to-day emotional and ethical ties to the living biosphere below.

Seen from low Earth orbit, the planet looks both luminous and precariously exposed. While the crew members conduct routine laboratory checks, maintain life-support hardware, and log telemetry readings, their eyes keep returning to the curved horizon—a thin, shimmering band of atmosphere separating life from the black vacuum of space. Harvey foregrounds this asymmetrical dependence early in the book, observing that the astronauts 'cannot live without the earth, and the earth cannot live without them—or rather, it can, and easily, and will' (Harvey, 2023, p. 11). This study offers a close, reader-oriented ecocritical analysis of *Orbital*, examining how Harvey portrays human-nature entanglement through the lived routines and private reflections of her characters. By tracing the crew's collective watch over an approaching Pacific super-typhoon alongside their individual memories of loss and belonging, the paper shows how Harvey replaces triumphalist narratives of space exploration with an ethic of planetary care.

2. Theoretical Framework: Ecocriticism, Temporal Form, and the Orbital Gaze

Reading *Orbital* as an Anthropocene narrative requires situating the novel within broader debates over how literature represents the nonhuman world. In *The Environmental Imagination*, Lawrence Buell (1995) contends that modern ecological crisis stems largely from a failure of cultural imagination, calling for literary works that displace human centrality and treat the natural environment as an active presence rather than passive scenery. Harvey's design aligns closely with Buell's framework. Throughout *Orbital*, the Earth never functions as a static backdrop; instead, its shifting cloud bands, retreating ice sheets, and glowing coastal cities set the emotional pulse of the crew's sixteen orbits. As Luca Diani (2026) argues, Harvey's decision to compress sixteen orbital days into one terrestrial twenty-four-hour circadian cycle slows down

narrative teleology, encouraging readers to contemplate human impact within a deeper geological and cosmic timescale.

Viewing the planet from space also engages a complex visual history. Cultural geographer Denis Cosgrove (2001), in *Apollo's Eye*, explains how Western depictions of the globe from above have long encouraged an 'Apollonian' gaze—a detached, quasi-divine perspective tied to cartographic control, imperial expansion, and Cold War technological dominance. Yet Cosgrove points out that whole-Earth photographs taken during the space age simultaneously sparked a counter-tradition centered on ecological vulnerability and global interdependence. Building on this tension, Claire Cazajous-Augé (2025) notes that Harvey's novel reconfigures the 'Anthropocene cosmic sublime' through the astronauts' embodied, lived perception rather than cold technological mediation, turning awe at the Earth's scale into a keen sense of environmental responsibility. Although the space station represents an extraordinary feat of international engineering, its crew experiences no illusion of mastery over the planet. Instead, orbital distance strips away anthropocentric arrogance and exposes humanity's complete biological reliance on a fragile biosphere.

3. Discussion

3.1. Cosmic Intimacy and Terrestrial Grief: Chie and Shaun

Among the six crew members aboard the station, the quiet companionship between Japanese astronaut Chie and American astronaut Shaun demonstrates how personal mourning and ecological awareness converge in orbit. Instead of manufacturing interpersonal drama, Harvey highlights a calm solidarity born from shared isolation. Chie processes the recent death of her mother in Japan while looking down at the islands passing beneath the station's cupola window. For Chie, the Earth is simultaneously an astronomical body and a landscape of intimate maternal loss; watching Japan glide swiftly out of view confronts her with the irreversibility of time and human mortality. Her private sorrow resonates with a wider ecological grief for a planet undergoing rapid, irreversible change.

Shaun, whose inner life is anchored by his Christian faith, his devotion to his wife, and his love of classical art, balances Chie's quiet introspection with a sense of spiritual reverence. As they work side by side during their scheduled shifts, their exchanges reflect a shared respect for the biosphere that keeps them alive. Neither character treats the Earth merely as a set of scientific measurements; both perceive it as a vulnerable sanctuary suspended in an indifferent universe. Through Chie and Shaun, Harvey suggests that genuine ecological consciousness grows out of emotional openness—an admission that human beings, regardless of technological sophistication, remain bound to the fragile rhythms of soil, water, and air.

3.2. Geopolitics, Brotherhood, and the Illusion of Borders: Anton and Roman

The bond between Russian cosmonauts Anton and Roman adds a political dimension to the novel's environmental vision by contrasting terrestrial borders with orbital continuity. Sharing the compact quarters of the Russian segments, Anton and Roman carry the institutional legacy of spaceflight history, yet their everyday routines expose the artificiality of national frontiers. From two hundred and fifty miles up, the political boundaries over which governments dispute territory and wage wars disappear completely. As Harvey observes, from low Earth orbit, 'continents and countries are nothing more than colours and shapes, a patchwork of browns and greens and blues' (Harvey, 2023, p. 43). What remains visible are physical landforms—mountain chains, river deltas, deserts, and weather systems that drift uninterrupted across sovereign lines.

Harvey uses Anton and Roman's understated camaraderie to question geopolitical fragmentation during a period of planetary climate emergency. While nations on the ground remain divided by strategic rivalries, the cosmonauts and astronauts aboard the station must cooperate seamlessly inside a closed life-support loop where water, oxygen, and power are continuously recycled. Their daily survival turns the spacecraft into a working model of global interdependence. As Buell (1995) notes, ecological interconnectedness renders isolationist politics unsustainable. By portraying Russian, American, European, and Japanese crew members living as one interdependent household above a borderless Earth, Harvey underscores the necessity of collective environmental stewardship in the Anthropocene.

3.3. The Super-Typhoon and the Ethics of Witnessing: Pietro and Nell

The ethical urgency of *Orbital* comes into sharpest focus as the crew tracks a massive super-typhoon gathering strength over the western Pacific and bearing down on the Philippines. Across successive orbits, the storm grows into a stark emblem of climatic volatility and human exposure. For Italian astronaut Pietro, the approaching cyclone awakens a vivid memory of a Filipino fisherman he once met during a visit to Southeast Asia. Gazing down at the tightly coiled cloud bands, Pietro recognizes that a weather system admired for its geometric beauty from orbit brings catastrophic storm surges, displacement, and loss of life to communities below. Harvey captures this unsettling duality by describing the typhoon as 'a vast white spiral, an eye of terrifying beauty and incomprehensible violence' advancing across the ocean (Harvey, 2023, p. 98).

British astronaut Nell experiences a parallel tension between scientific observation and moral helplessness. Trained as a scientist, Nell understands the atmospheric physics driving the cyclone, yet she

feels the frustration of watching an environmental disaster unfold without being able to intervene. In these passages, Harvey directly challenges Cosgrove's (2001) concept of the detached Apollonian spectator, illustrating what Cazajous-Augé (2025) identifies as an ethical renegotiation of the cosmic sublime. Rather than feeling like distant gods surveying a map, Pietro, Nell, and their fellow crew members feel an acute ethical bond with the vulnerable coastal populations in the storm's path. The typhoon lays bare the structural inequities of the Anthropocene: while industrialized nations generate the bulk of greenhouse emissions, marginalized coastal communities suffer the earliest and harshest impacts of extreme weather. Through the crew's anxious vigilance, Harvey converts passive observation into an act of moral solidarity.

3.4. The Space Station as an Ecological Microcosm

Beyond individual character portraits, the space station itself operates as a tangible allegory for planetary limits. Hurtling through a hostile vacuum as a sealed habitat, the vessel sustains human life only through rigorous conservation and constant upkeep. Every drop of moisture is recaptured, carbon dioxide is scrubbed from the cabin air, and electrical power is carefully rationed. Inhabiting this delicate mechanical shell forces the astronauts to live by a reality that consumer societies on Earth routinely overlook: resources are finite, and survival depends on preserving systemic equilibrium.

Harvey's prose repeatedly contrasts the sterile, metallic interior of the spacecraft with the sensory abundance of the world below. The crew members miss ordinary terrestrial experiences—the scent of rain, the brush of wind, the pull of gravity—yet physical distance deepens their attachment to the Earth. Framing the planet itself as a vast, self-regulating vessel moving through space, Harvey emphasizes the thinness of its protective envelope, noting that the atmosphere is 'a skin no thicker than the peel of an apple' shielding life from the void (Harvey, 2023, p. 122). In doing so, *Orbital* revives the classic environmental metaphor of 'Spaceship Earth,' reminding readers that humanity has no backup habitat if the terrestrial biosphere fails.

4. Conclusion

Samantha Harvey's *Orbital* makes a quiet yet resonant contribution to contemporary Anthropocene literature. By compressing the narrative into a single day of sixteen orbits, Harvey sets aside conventional dramatic conflict in favor of sustained, meditative attention to the Earth. Through the interwoven reflections of Chie, Shaun, Anton, Roman, Pietro, and Nell, the novel demonstrates how orbital distance can awaken deeper terrestrial empathy. Read alongside the foundational insights of Lawrence Buell and Denis Cosgrove as well as recent critical scholarship on the cosmic sublime and circadian form, *Orbital* emerges as a work that dismantles illusions of technological mastery over nature. Instead, Harvey's craftsmanship highlights

both the fragile beauty of the biosphere and the artificiality of human divisions, inviting readers to embrace an ethic of shared planetary responsibility.

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