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The Homely Sublime in Space Science documentary Films : Domesticating the Feeling of Homelessness in Carl Sagans "Cosmos" and Its Sequel

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**The Homely
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The release of Carl Sagan's *Cosmos: A Personal Voyage*, the thirteen-part television series broadcast by the PBS in 1980, marked a genuine revolution in the development of American space science documentary film. Authored by Carl Sagan, Ann Druyan and Steven Soter and presented by Sagan himself, the production cherished an unprecedented popularity worldwide, being the most extensively watched PBS series as of 2009 and having won the prestigious Emmy and Peabody Awards. Presumably, some of the chief reasons for its global success include the use of groundbreaking special effects, an atmospheric score composed by Vangelis, a novel scientist-hosted format as well as a relatively accessible, philosophical and stirring narration. The fact that the series is described as "a watershed moment for science-themed television programming" (Itzkoff) is also due to the unquestionable authority and visionary rhetoric of Sagan who made his name not only as a television figure as well as an effective science advocate and communicator, but also as a scientist and author of both popular science and science fiction books written for a broad audience. Krone praises Sagan's notable contribution to the popularization of astronomy as follows (68):

Carl Sagan searched for worlds "fabulously unlike Brooklyn" since at age nine, in 1942, he was fascinated by the adventures on Mars created by Edgar Rice Burroughs. That began his interest, followed by his career as astronomer, astrophysicist, exobiologist, Director of Cornell University's Laboratory for Planetary Studies, and Professor of Astronomy and Space Sciences. He was a best-selling author – twelve books and 400 journal articles.

Even more importantly, however, a vast experience Sagan gained allowed him to alter the image of space science documentary and render his series seen as canonical in its visual and narrative conventions. A sophisticated use of modern art, animation and digital imagery became not only iconic in terms of science visualizing techniques (Lomberg, 194), but it also reinforced a sense of transcendence while drawing on a mediated representation of the cosmic and astronomical sublime. Also, Sagan's ideological rhetoric appears to be evidently founded on cosmological issues traditionally tackled within the province of religion (Krone, 68; Klassen and Zimmermann, 30; Lessl, 175). Lessl argues that while maintaining a hybrid generic form, *Cosmos* (175)

sets the instructional elements of the series within a larger mythical framework reminiscent of numerous works of science fiction. The presentation of science (...) creates a mythic understanding of science which serves for television audiences the same needs that religious discourse has traditionally satisfied for churchgoers.

Specifically, the core of Sagan's ideology, as observable in the production, clearly centers around spreading the idea of human uniqueness and weaknesses as well as a continuous need to search for extraterrestrial life and intelligence (Krone, 68–69). His best-selling book *Intelligent Life in the Universe*, co-written with Iosif Shklovsky, largely contributed to vivifying the public interest in detecting alien signals and the official establishment of a multi-million-dollar SETI programme by NASA in 1971. An open-minded, critical and holistic

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approach to studying the nature of science and mankind's connection to the cosmos is best summarized by Sagan himself (276): "It [studying science] has two rules. First: there are no sacred truths, all assumptions must be critically examined; arguments from authority are worthless. Second: whatever is inconsistent with the facts must be discarded or revised."

It seems that within American astroculture studies, the subject of space science documentary film, though having a considerably long tradition, has been hardly explored in scholarly terms. The post-war years, often characterized by a popular science boom (Gregory and Miller, 69), brought some revolutionary changes in the development of the genre, which showed a gradual tendency to move toward more complicated representational extremes. Largely triggered by the rise of specialist science writers and development of television, some early science documentaries have taken up the subject of outer space and space exploration by producing a particular form of textuality, thus "mediating between arcane forms of otherwise inaccessible knowledge, and popular everyday forms of understanding" (Silverstone, 72). As a subgenre of the science documentary, a space science documentary utilizes a standard and simple format by providing explanatory voice and illustrative visuals in the style of photographic realism (Mayeri, 64). In some early documentaries of this kind, including Disney famous television series, *Man in Space*, *Man and the Moon* and *Mars and Beyond* (1955–1957), linear essaylike structure was achieved through the combination of still images, video, graphics and animation with a voice-over narration, which was likely to convey certain ideological subtexts. However, in some later programmes produced since the late 1970s during the second science boom, the task of portraying largely unseeable astronomical phenomena or futuristic space technology can be deemed more complex. Therefore, in order to present the viewers with visually appealing, simplified and comprehensible representations, space science documentaries had to rely on a set of familiar cultural and historical conventions of depicting space- and space exploration-related concepts.

One of such conventions is centered around the idea of domestic space, defined as "an environment that can exhibit a sense of place for the dweller" (Clemons, Searing and Tremblay, 130), where a sense of place is understood as belonging to and feeling secure within the given surroundings (Hiss, 35). Naturally, the concept has evolved in a strong relation to the self as well as home design and interior, which tend to convey symbolic meanings and thus become capable of transforming a space into a place. Unsurprisingly then, domestic space has been often explored in a highly interdisciplinary manner (see e.g. Altman and Wermer), combining perspectives of environmental psychologists (see e.g. Brierley), anthropologists (see e.g. Cieraad), social or art historians (see e.g. Foy and Schlereth; Briganti and Mezei) and human geographers (see e.g. Duncan and Lambert), who studied the subject from the points of view of material culture as well as social, cultural and consumer studies. Interestingly, however, the notion has been hardly examined in the context of space studies and astroculture, the latter of which stands for "a heterogeneous array of images and artifacts, media and practices that all aim to ascribe meaning to outer space" (Geppert, 8). As pointed out by Schmölders, since the beginning of the space age era, humans have literally domesticated outer space primarily through utilizing space and homemade technology (59):

Scholars, engineers and designers plan hotels and subdivisions for the moon and Mars, invent space elevators,

sell space trips, and so forth. Furthermore, the Copernican shock has dissipated in a major way because of the Internet. Thanks to outer space and satellite-based communication, any private computer owner can use the technology of Google Earth to look up terrestrial addresses, as though they were looking in at earth from outer space. Conversely, Google Sky is opening up a reverse perspective into the depths of space, based in large part on Hubble Space Telescope images.

At the same time, this clearly metaphoric process of domestication has involved both taming and trivializing the feeling of sublime homelessness present in space-related content exposed in the media, particularly since the advent of television (Schmölders, 59). Some of the most common ways of achieving it is, as mentioned before, an apparent dependence on a set of familiar cultural codes, defined as “symbols and systems of meaning that are relevant to members of a particular culture” (Hyatt and Simons, 23). This approach has been used, for instance, in psychological studies of space exploration, where the motif of home or homely surroundings, often represented by terrestrial substitutes, played a pivotal role in a series of experiments conducted on the ISS crew members (see e.g. Bishop, 47–78). In science documentary film, however, various conceptualizations of outer space also rely on domestication of the sublime as explored in literary theory or visual arts. For example, Sandner contends that in the context of the fantastic discourse, this process synthesizes the sublime with the beautiful and brings it “into the human sphere in an essentially connective and unifying way,” while drawing on Longinus’ theory of the sublime seen as human interaction, which reinforces a sense of safety (166). Meanwhile, Blair proposes the concept of the domestic sublime defined as a sublimity rooted in contemporary domesticity where Kantian sublime’s limitlessness “resides in the presentation of excess labor, materials and potential” related to the home or human dwelling in general. On the other hand, in line with Geertsema’s hypothesis that domestication and subjection of wilderness paradoxically empower nature, one may argue that the representation of the cosmos privileges outer space environment through connoting with the process of colonization and progress (100).

Hence, as suggested above, the feeling of homelessness, often accompanying contemplating the realm of outer space, appears to be inseparably connected with the (domesticated) sublime, lavishly present in the U.S. space-related imagery produced since the outset of the space age era. In one of her recent works, *Picturing the Cosmos: Hubble Space Telescope Images and the Astronomical Sublime*, Kessler comments more broadly on 20th century practices of representing space subjects in the U.S. culture where scientists and artists often utilize the mode of the sublime when translating complex data into a number of popular images depicting galaxies, nebulae or star fields. More specifically, she argues that rather than coming up with an entirely novel system of visualizing space, they have extended an existing one, inseparable with the idea of exploration and settlement, to subsequent stages of space exploration. This mode, used extensively in the last few decades, is that of the mythicized American frontier that has “functioned as the framework through which a new frontier was seen” (Kessler, 8). A similar view is expressed by Sage who, in the introduction to his recently published book, *How Outer Space Made America: Geography, Organization and the Cosmic Sublime*, investigates the way and reasons why the U.S.

space programme reproduced the nation's geographical, cultural and political imagination by appealing to the image of America as the transcendental and sublime state. The scholar claims that audiences exposed to the visions of outer space and space exploration, whether generated by space telescoped or popular media, are always confronted with a strong sense of sublime vastness and infinity (Sage 2014, 1):

Those passionate about outer space have long been in awe of its apparent 'spacelessness,' outer space appears unbounded, infinite, sublime. When we see or think through Space, whether by looking at images produced by a powerful space telescope or enjoying a science-fiction film, we can journey in an instant to the most distant reaches of the universe, and simultaneously billions of years back in time, or into a barely imaginable future, far beyond the possibility of human life.

Meanwhile, in the wake of earlier scholarly discussions on the cosmic sublime, Lyotard suggests that the sublime of transcendence is sometimes replaced by the sublime of immanence (53–54). More specifically, he argues that humans' capability of feeling and imagining the cosmos constitutes the cause for sorrow as they realize the constraints of their own physical condition. In this way, Lyotard challenges a largely positive vision of the sublime, stemming mostly from the vastness of space and limitless possibilities created by new space technologies, by noting that modern astrophysics also draws on evoking a negative sublime feeling by providing their audiences with painful and finite outer space experiences.

As noted before, Sagan's reliance on evoking both the cosmic and astronomical sublime is skillfully combined with creating a set of familiar, homely surroundings, which tend to trivialize and domesticate outer space environment as presented to the viewer. With regard to editing, this measure is achieved by means of dramatized sequences, rostrum camerawork, time-lapse, slow-motion and microphotography, hand-made animation as well as the combination of live location and studio footage with composited sequences of Sagan walking across a cosmological calendar (Campbell, 14). Meanwhile, in terms of narrative conventions, a clear reference to domestic elements has been made by introducing a special, curiosity-fueled vessel called "Spaceship of the Imagination," which, with Sagan travelling aboard as the captain, journeys through space and time, familiarizing the audience with various astronomical objects and phenomena. Reminiscent of a dandelion seed from the outside, the interior appears to be both futuristic and cozy through merging Star Trek-like shapes with cathedral ceilings. On the other hand, an enormous window positioned in the middle of the spacecraft's cockpit reinforces the sublimity of outer space views while the vehicle traverses the far-flung reaches of the remote universe, thus literally connecting the homely space with the fearful, yet ravishing unknown. What is more, throughout the episodes, Sagan makes numerous references to the cultural heritage of the world's nations while narrating, explaining or speculating on the depicted scientific concepts. While the most well known instances of this kind include a description of the ancient Library of Alexandria, a selection of samurai warriors, the Dutch tradition of sailing ship explorers, the Anasazi's ceremonial calendars or the destruction of the Aztecs by Spanish conquistadors, symbols and systems of meaning related

to American history and culture encompass some commonly recognizable figures, places and events. These embrace, for example, Edgar Rice Burroughs' science fiction novels, Percival Lowell's famous observations of Martian "canals," Robert Goddard's rocket-building experiments, the U.S. space programme's achievements or natural and urban locations, such as Jackson Lake, Wyoming, Rockefeller Center, St. Patrick's Cathedral or Brooklyn.

Particularly the latter can be deemed representative of the homely sublime, the aesthetic category, which seeks to render certain visual elements of the Romantic wilderness "comparatively safe" (LeMenager, 52). For instance, such an impression may be reinforced by the urban sublime of New York City, present in the third episode of the series, *Harmony of the Worlds*. Here, the view of the seventh-floor roof gardens of the Rockefeller International Building as well as the bird's-eye view the Rockefeller Center itself, St. Patrick's Cathedral or neighbouring streets is likely to foster the feeling of sublime dread and fear in the face of the impossible totality of uncanny urban technostructure (Den Tandt, 25). At the same time, except for its overwhelming quality, the height and magnitude of the visible buildings and skyscrapers, whose image accompanies Sagan's scientific and philosophical narration on astrology, place the viewer on a continuum from the divine to the domestic cityscape. The majestic and gloomy Manhattan, oscillating between the sublime and the uncanny (Lindner, 63), simultaneously awes and retains human characteristics; its widely recognizable modern skyline and crowded places create a sense of security and familiarity combined with a sense of mystique and transcendence. A similar function is served by introducing other iconic filming locations, whether in America or abroad, the latter of which include Pythagoras' Cave in Samos, the Great Hypostyle Hall in Egypt, the Royal Botanic Gardens in Kew, England or Cavendish Laboratory at the University of Cambridge. Specifically, however, the U.S. locations, such as Lowell Observatory in Flagstaff, Arizona (Episode 5: "Blues for a Red Planet"), the Great Kiva at Chaco Canyon, New Mexico (Episode 3: "The Harmony of the Worlds"), Sagan's home district in Brooklyn, New York (Episode 7: "The Backbone of Night"), Very Large Array, New Mexico (Episode 10: "The Edge of Forever") or The Regina Maris at Glen Cove Creek, New York (Episode 11: "The Persistence of Memory"), all seem to incorporate the natural sublime, typically embracing such qualities as terrorizing and awe-inspiring vastness, infinity or magnificence, with the homely sublime evoking a sense of monumental, yet domesticated and somehow confined place. When the audience is in turn confronted with outer space environment, mostly generated digitally, the thrill of cosmic and astronomical sublime, at both microscopic and macroscopic scale, is balanced with the interior of Sagan's spaceship or the view of some familiar locations used by the scientist to strengthen the effect of human sublime, the symbol of mankind and its deep interconnection with the cosmos.

Unsurprisingly, the series' 2014 sequel, *Cosmos: A Spacetime Odyssey*, written by Ann Druyan Steven Soter and presented by Neil deGrasse Tyson, follows numerous conventions utilized by its predecessor. Broadcast on ten 21st Century Fox networks, the programme, though not as popular as Sagan's, was generally praised by the critics and won several television broadcasting awards, including the Emmy and Peabody Awards. As the producers' goal was to capture the spirit of the original *Cosmos*, it followed the thirteen-episode and scientist-hosted format as well as used a similar storytelling approach by introducing such elements as the Ship of the Imagination and the Cosmic Calendar. Naturally, the use of far more state-of-the-art and extensive

computer-generated graphics, animation footage and special effects allowed to present the viewers with more elaborate and convincing representations of astronomical phenomena. Tyson, one of America's most pre-eminent science communicators inspired by Sagan as a college student, intended to include a number of "uplifting themes" ("Neil deGrasse Tyson") in the script capable of fostering wonder and skepticism that would ascribe meaning to the discussed concepts in the way they reflect philosophical and religious ponderings of 21st century audience. Below Campbell draws certain parallels between the original series and its sequel in terms of selected representational strategies (14):

Tyson's programme also neatly links together the trends of 21st century factual entertainment programmes, using CGI extensively throughout in a variety of forms, with some of the techniques of science programmes of the 1950s. Sagan's series had used dramatic reenactments of historical discoveries, although only his voice is heard narrating the events being depicted by actors, whereas Tyson's series reconstructs historical sequences in a drawn animation style, very similar in appearance to that used in Disneyland films about space in the 1950s, and featuring a range of actors presenting the events being recounted.

Naturally, there are also differences between the series considering their reliance on the aesthetics of the sublime. Namely, it seems that the sequel is likely to draw on the cosmic and astronomical sublime in favour of the homely sublime evident, for instance, in MacFarlane's updated design of a highly futuristic and largely transparent Spaceship expected to "remain timeless and very simple" (Mandi) with the ceiling projecting the future events and the floor envisioning those that occurred in the past. Also, an expansive and ethereal backing score by Alan Silvestri as well as a number of terrestrial locations, mostly set in places, which expose boundless and untamed or picturesque and tranquil qualities of nature often inspired by the Hudson River School's aesthetics, clearly contribute to this impression.

Following Campbell's argument, *A Spacetime Odyssey* appears to rely on the three recurring visual tropes typical for post-2010s space science documentary films, including astronomical imaging, documentary cinematography and screen fiction aesthetics (67–73). While the first trope is particularly evident in the use of diffraction spikes in the series' animated sequence, which recounts Giordano Bruno's vision of the scale of the universe (Episode 1: "Standing Up in the Milky Way"), the latter usually manifest themselves in a ubiquitous adoption of docu- and photorealist techniques like flare lens as well as naturalistic light and colour combined with the Magisterial Gaze, which denotes "seeing the landscape from an elevated perspective" where "the viewer assumes a Godlike gaze" (Sage 2008, 32). According to Campbell, except for numerous CGI sequences, the Magisterial Gaze effect is utilized in the representation of Tyson's ship of imagination, which (75)

explicitly positions him as able to transition between a downwards gaze to the cosmological past, an upwards-gaze to the future, and a horizontal gaze for the present. The movement of the ship around, over, under, into and

through objects constantly shifts this perspective, but always seems to retain a notion of authoritative gaze over the images being shown.

Another recurrent visual trope persistent throughout the series is that of the Grand Tour framing of space, which is constructed “into three distinct phases starting with a terrestrial origin and looking into space, then touring the solar system, and finally into deep space back to the dawn of the cosmos and the Big Bang” (Campbell, 76). In *A Spacetime Odyssey*, this effect is achieved with the image of cliffs and a campfire, the latter of which evokes associations with the human progress or, more specifically, ancient technologies and beliefs related to astrology, that later give way to Tyson’s narrative on the Big Bang, the origin and evolution of life, the speed and the wave theory of light, the age and paleogeography of Earth, electromagnetism, greenhouse effect, the composition and fate of stars, dark energy and dark matter or extraterrestrial life. Campbell argues that such a paradigm “offers a clear encapsulation of Kant’s mathematical sublime, as the vastness of the universe is shown to be containable within a conceptual framework of understanding, and the technological means of both obtaining that understanding and visualizing it” (80). In this context, the series relies on the cosmic, astronomical and technological¹ rather than homely sublime as it often invokes a sense of movement of a given object toward the viewer, hence implying a “dynamic, kinetic gaze” (Bukatman, 99). In their attempt to categorize *A Spacetime Odyssey*’s recurring themes, Mehta, Mishra and Henriksen make a similar observation by noting that it specifically draws on the notion of the sublime and intellectual beauty, Grand Design, which “lies in recognizing the truth and the fundamental structures that govern the universe,” and aesthetic experience enhanced by western classical music, which creates “an aesthetically satisfying ambience.”

It seems almost indisputable that the late 1970s and 1980s witnessed a revival of public interest in popular science, which experienced a clear decline since the mid-1960s. The trend, dubbed by Newsweek “the science boom” (Schardy, 104) and partly triggered by the Apollo mission-inspired environmental and New Age movements, led to the appearance of *Cosmos* and publication of several new popular science magazines, including *Astronomy* (the first issue appeared in 1973) or *Omni* or *Star & Sky*, which all featured astronomical phenomena and current advancements in space science (Westwick, 37). Nevertheless, it is Sagan’s series that is often credited with revolutionizing the image of science documentary by relying on a scientist-hosted format as well as a mediated, entertaining and easily-consumed experience of the homely

1 Originally proposed in Leo Marx’s famous work, *The Machine in the Garden*, the concept was ideally supposed to strive for the “middle landscape” through reconciling the machine with the pristine and pastoral wilderness. One of its earliest descriptions, however, was proposed by Charles Caldwell in the 1832 issue of the *New England Magazine*: “Objects of exalted power and grandeur elevate the mind that seriously dwells on them, and impart to it greater compass and strength. Alpine scenery and an embattled ocean deepen contemplation, and give their own sublimity to the conception of beholders. The same will be true of our system of Railroads. Its vastness and magnificence will prove communicable, and add to the standard of the intellect of the country” (195). Some more recent analyses of the technological sublime, the most notable of which include David E. Nye’s monograph, define the notion as a distinctively American formation and “an essentially religious feeling, aroused by the confrontation with impressive objects”, which has become “self-justifying parts of a national destiny, just as the natural sublime once undergirded the rhetoric of manifest destiny” (xiii).

sublime. As suggested in the course of the analysis, the examined concept aims to reinforce the cosmic and astronomical sublime while emphasizing familiarity of terrestrial locations as well as the scope and interconnectedness between the universe and the world's technology, natural resources and all the living creatures. Also, the production's success led to the release of similarly engaging documentaries where the spectator's pleasure derives from the presence of a scientist, usually a media celebrity, as well as technology's ability to create visually appealing and simplified representations of astronomy-related concepts and events, which all serve to validate and domesticate the unknown and often terrorizing sublimity of outer space views.

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