

“FLY ME TO THE MOON!”:
LUNAR EXPLORATION IN SCIENCE FICTION

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Introduction

The moon is the most visible object to the naked eye in the night sky. Its phases have long fascinated, guided and even inspired humankind. Given the fact that it is the closest celestial object to Earth in outer space, it naturally has become the next destination of humankind after its home planet’s orbit and so far remains as the only other place in outer space where humans have left a footprint.

Mankind had long dreamt about reaching to the moon. Thanks to the onset of the Cold War space race and the ensuing Apollo program, traveling to the moon turned into a reality in 1969. Today, the moon is a desired destination for the space programs of many state and non-state actors and is even a potential point of cooperation in space activities as has been demonstrated in Artemis Accords. There are several reasons to go (or to go back) to the moon for spacefaring actors: scientific research for uncovering the mysteries of cosmos, potential to use the moon as a base for further outer space exploration and resource extraction. It is no doubt that moon landing is a milestone event in space exploration which has proved the possibility of endeavors previously deemed to be impossible.

Even though the moon proved to be reachable, fascination and preoccupation with the Moon continues. Being the only natural satellite of the home of humanity, it has taken center stage as the subject of several different works of art in different fields and across various cultures and

over many centuries, before and after the moon landing. In the artistic world, it is science fiction, given its focus and ambition, that comes forward as the most appropriate and well-equipped genre to talk about the moon and it does so in different ways.

Science fiction may seem to many as a genre preferred by nerds. While this may have been partially true in the past, today the genre is getting more and more popular among wider circles. This is not only because a greater number of people possibly find science fiction more relevant, entertaining, and useful to themselves in our times but also thanks to the fact that access to science fiction is no longer limited to the medium of books as it used to be in the past. Although books and comic books were the original means by which readers could access what science-fiction offered, today one can also easily engage in a work of science-fiction through feature films, TV series and computer games.

It was Morton Kaplan who said that “History is the great laboratory within which international action occurs”. It can be said that the realist view of international relations is closest to the idea of history serving as the laboratory of international relations. In the view of realists, historical data confirms their approach: realists claim that history gives the scholars a rich repertoire of events in international relations to test for certain hypothesis.

In the same vein, one can make use of the future as a similar laboratory for international relations: a laboratory where we can test our hypotheses further by looking at how we imagine events in the future. Ursula K. Le Guin, one of the most renowned science fiction authors of the 20th century is quoted to have said “The future is a laboratory for trying out ideas in”.

Trusting Le Guin’s expertise of and insight into her own field, with the speeding up of the space race among multiple state and non-state actors, many of them focusing or targeting the moon as part of their space program efforts, now would be a good time to take a look at the topic of the “moon” in science fiction and see the role of the moon in the past, present and future space race(s) as depicted by works of science fiction. This paper aims to study works of science-fiction to learn lessons and cautionary tales about humanity’s next planned episode on the moon, a valuable approach for an organization such as Moon Village Association (MVA).

Literature Review (to be expanded)

The topic has attracted some academic interest. For example, Jalufka & Koeberl (2001) and Alcubierre (2017) study how realistic the moon is depicted in science fiction or on big screen. Trundle, Troland and Pritchard (2008) look at how the moon was represented in children's literature.

The topic seems to also have generated some interest in mainstream media, especially in terms of how science-fiction has played a role in the past / present moon race (see for example Benson 2019 and Morton 2019). Some of these current works especially scrutinize the role of science fiction in motivating lunar exploration.

Methodology

This is currently a work in progress where the author tries to determine the general frames (themes) of stories in which the moon is portrayed, what these frameworks tell us and how in the face of these frameworks one should continue moon exploration in the future. In this work, the author takes science fiction works in literature and TV-Cinema as the main sources (leaving out video games and comic books). Since this is still an on-going research, only the outline of research and its general findings will be shared here, keeping further analysis for the actual publication.

The works of science fiction to be studied for this research have been identified through various internet-based sources. Wikipedia entries such as "Moon in Film", "Novels Set on the Moon" or entries on Goodreads page "Moon in Fiction" have been screened for putting together a list of works to be studied within the context of this research. Moreover, members of certain science-fiction related social media groups (especially on facebook) have been consulted through group posts where they have been asked to submit suggestions of books and films to be considered for such research, which has proved to be very useful. Since this is a work in progress, the database is not yet complete and is constantly growing. A full list of screened works with full citation will be published as an annex to the paper when it comes to the publication stage. For the moment

a preliminary list of those covered so far has been provided at the end of this paper only with the name and date of the source.

The author has watched /read some of the works herself. Given limited time to view all films and read all books on the topic, where it is impossible to reach the actual source, the author has done research about the works studied through published sources such as reviews, book covers or scholarly articles about the said work.

Frame

The author so far categorized 4 main general frames (or themes) where the moon is the subject of a work of science fiction or where the moon appears as the background of the main subject of the work of science fiction. It is possible to list these categories as:

- Moon Landing before the Moon Landing
- Actual Moon Landing Stories
- Alternative Histories of the Moon
- Moonbase / Colony with various uses

These categories are not mutually exclusive. Oftentimes the depiction of the moon can be categorized under more than one of these headings and can also change within the context of the same work.

Findings

A first frame or category of science fiction works to talk about lunar exploration, which will be entitled **“Moon Landing before the Moon Landing”** constitutes the (earlier) works of science fiction that dealt with lunar exploration prior to the actual moon landing in 1969. Many of these works mainly explore the possibility and difficulty of and efforts towards a fictional moon landing and what would be found on the moon when the first humans reach there. Given limited scientific data at the time of the writing / creation of these works, many of them border fantasy.

These works include early works such as *From the Earth to the Moon* (1865) and *Around the Moon* (1869) by Jules Verne, the French short film *A Trip to the Moon* (1902), the film *The Mouse*

on the Moon (1963) which is based on the book by Leonard Wibberley with the same name, High Vacuum (1957) by Charles Eric Maine, The Moon Maid (1926) by Edgar Rice Burroughs several works of Robert A. Heinlein such as The Man Who Sold the Moon (1950), Rocketship Galileo (1947) or the screenplay of Destination Moon (1950) and certain works of Arthur C. Clarke such as Prelude to Space (1951).

There are interesting storylines among this category where for example Destination Moon and The Man Who Sold the Moon talk about the private actors reaching the moon earlier than state actors or where The Mouse on the Moon is about a lesser state actor (Duchy of Great Fenwick, a fictional microstate in Europe) outsmarting great powers and reaching the moon before they do. Some of these works imagine an alien (and mostly ancient) civilization on the moon confirming the interest of humankind for finding life in other space objects, possibly as near as the moon (see The First Men in the Moon (1901) by H.G. Wells

The second frame or category includes **“Actual Moon Landing Stories”**. These are more about the travails of getting to the moon such as all works related to the Apollo Program. It may not be very appropriate to call these works science fiction (although oftentimes they are categorized as such) given the fact that they are inspired by or based on real events. Some of these movies do not even portray the moon environment at all, but they only show the effort of getting there. Apollo 13 (1995), First Man (2018), From the Earth to the Moon (HBO miniseries -1998) would be some examples to be studied under this title. Despite not being science fiction, they can be included in the study for showing the history of lunar exploration so far. This category can be studied in comparison to the previous category as to what the dream and reality of lunar exploration looked like through the lens of science-fiction works.

A limited number of works deal with **Alternative Histories of the Moon** such as Millennium (1976) by Ben Bova where the world is at the brink of WWII between the two superpowers with a lesser role for China and where ABM defense systems of both superpowers are provided from bases on the moon; For All Mankind (Apple TV+, 2019- present) where the Soviets also make it to the moon which questions what would have happened if the space race went on; The Pilgrim Project (1964) by Hank Searls where Americans send only one man to the moon to beat the Russians with plans to return him later or Apollo at Go (1963) by John Sutton which is a fictional

documentary about the moon landing. One might also add to this category the film Iron Sky (2012) where Nazis apparently fled to the moon after the WWII and years later return to invade Earth.

A large category of works depict the **Moon as a Base**. In this frame, one can actually talk about multiple frames and the moonbase can take on several roles such as:

- **an outpost of humankind's outreach into the solar system or interstellar travel** as is the case in Ad Astra (2019), 2001: A Space Odyssey (1968), The Expanse (2015-2022)
- **a ship itself instead of being a satellite** as in Space 1999 (1975-1977) and Mutineer's Moon (1991) by David Weber
- **a scientific colony** (Space 1999 (1975-1977), A Fall of Moondust (1961) by Arthur C. Clarke, the Moon is Hell! (1950) by John W. Campbell); Moonbase 3 (1973)
- **a colony with prospects of future independence** as in the case of The Moon is a Harsh Mistress (1966) by Robert A. Heinlein
- **a resource for space mining**, especially related to Helium-3 as in the case of the film Moon (2009) and Gunpowder Moon (2018) by David Pedreira, gold as in Frau in Mond (1929), ceramic sapphire as in Moon Zero Two (1969) and heavy metal sources in Earthlight (1955) by Arthur C. Clarke.
- **home for commercial activities** as in The Expanse (2015-2022), Moon (2009), Trip of a Lifetime (2020) by Eric Reinholt Jr. or **a touristic destination** as in Trip of a Lifetime (2020) by Eric Reinholt Jr., A Fall of Moondust (1961) by Arthur C. Clarke, Limit (2013) by Frank Schatzing.
- **home for an international organization** such as the UN as in The Expanse (with the base called The New Hague) or Space Patrol as in The Long Watch (1949) by Robert A. Heinlein which is an international organization overseeing Earth's remaining nuclear weapons in a base on the moon.
- **a next stage in human evolution** as in Steel Beach (1992) by John Varley

Within these works, sometimes the Moon is also the scene of a murder as in The Patchwork Girl (1986) by Larry Niven, Red Moon (2018) by Kim Stanley Robinson and Gunpowder Moon (2018)

by David Pedreira, where the murder also has international implications or unexplained killings as in *Rogue Moon* (1960) by Algis Budrys. Oftentimes, a lot of emphasis is placed on the difficulty and inhospitability of the Moon terrain for settlement.

The frames in this last category can surely be reframed differently / alternatively. The crucial point is that it is actually this category that sheds light to the question as to how moon is used by the mankind whereas the previous categories deal more with the question of why being there is important and how roads need to be taken to get / stay there.

Conclusion

So far, the above categorizations or frames have been identified in this study as to what kind of a role the Moon is depicted in works of science fiction. The next tasks of the research are going to include enriching the literature review of works already done in the area, increasing the number of works in the database (the works of science fiction to be studied) and most importantly detailing how these works are narrating moon stories from a political and legal perspectives and what kind of cautionary tales they tell us.

One general lesson learned from these works of science fiction on the moon is that lunar exploration has mostly been imagined as a conflict or competition, be it among powers that try to reach to the moon, be it among powers that have already reached there or between the Earthlings and the imagined aliens and/or settlers on the moon. Although works that touch upon the cooperative potential on the moon also exist, they are the exception rather than the rule. This finding underlines the importance of the efforts of transnational non-state actors such as the Moon Village Association (MVA), trying to serve as a platform for both transnational and interdisciplinary cooperation in lunar exploration: building a bridge between state and intergovernmental actors as well as bringing together interested parties from multiple disciplines for a common goal.

Another lesson that comes forward is the dangers of seeing the moon as the next entity to be colonized. Either through the depiction of the Moon as an Earth-dependent entity, or through the narration of a story linked with exploitation of lunar resources and a race to profit from them, several works of science fiction warn us about how mimicking colonization of different parts of

the world the 19th century is not to be repeated on the moon. The warning is not only on states but also on non-state actors, hence this point goes hand in hand with a cautious and even hesitant perception of especially commercial activities on the moon. So far, only state actors have managed to soft land on the moon however this seems likely to change in the near future given the interest towards the moon of companies such as American Astrobotic and Blue Origin, Israeli SpacEL, Japanese ispace together with American Space (Koren 2018).

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Works Screened So Far (in order of mention in the paper)

Books

- From the Earth to the Moon (1865) by Jules Verne
- Around the Moon (1869) by Jules Verne,
- High Vacuum (1957) by Charles Eric Maine,
- The Moon Maid (1926) by Edgar Rice Burroughs
- The Man Who Sold the Moon (1950) by Robert A. Heinlein
- Rocketship Galileo (1947) by Robert A. Heinlein
- Destination Moon (1950) by Robert A. Heinlein
- Prelude to Space (1951) by Arthur C. Clarke
- The First Men in the Moon (1901) by H.G. Wells
- Millennium (1976) by Ben Bova
- The Pilgrim Project (1964) by Hank Searls
- Apollo at Go (1963) by John Sutton
- Mutineer's Moon (1991) by David Weber
- A Fall of Moondust (1961) by Arthur C. Clarke
- Limit (2013) by Frank Schatzing
- The Moon is Hell! (1950) by John W. Campbell

Films and TV Series

- A Trip to the Moon (1902)
- The Mouse on the Moon (1963)
- Apollo 13 (1995),
- First Man (2018),
- From the Earth to the Moon (HBO miniseries -1998)
- For All Mankind (Apple TV+, 2019- present)
- Iron Sky (2012)
- Ad Astra (2019)
- 2001: A Space Odyssey (1968)

- The Expanse (2015-2022)
- Space 1999 (1975-1977)
- Moonbase 3 (1973)