IMAGINING LIFE ON THE MOON

DURING THE RISE OF THE TELESCOPE

EDITED BY

TIM PRASIL

BROM BONES BOOKS

Imagining Life on the Moon during the Rise of the Telescope is the fourth volume of the Phantom Traditions Library series, published by Brom Bones Books. These anthologies feature "forgotten" genres or sub-genres of popular fiction—from supernatural and fantasy tales to detective mysteries and science fiction—written primarily during the 1800s and early 1900s. Edited by Tim Prasil, each volume has a well-researched introduction, helpful and interesting footnotes, and an appendix that spotlights a work or two of relevant non-fiction from the same period. Learn more about the Phantom Traditions Library at BromBonesBooks.com.

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INTRODUCTION

Tim Prasil

The 1600s: Telescopes Confirm the Lunar Surface Is Rough

We in the twenty-first century have seen photographs confirming the Moon's uneven, rocky, and crater-filled surface. We don't spend much time wondering what it might be like up there. But those living before the rise of the telescope in the early 1600s weren't so fortunate. The Classical Greeks and Romans, for instance, could only speculate about what the Moon really was. Was it a deity—Selene or Luna? Was it something like the Sun, a fiery globe emitting its own light? Well, during the 5th century BCE, Anaxagoras helped settle that by explaining that eclipses happen because moonlight is reflected sunlight and the otherwise dark satellite can block the Sun or catch the Earth's shadow.[1]

Still, this didn't rule out other possibilities. During the 1st century CE, Plutarch wrote a dialog titled "Concerning the Face which Appears in the Orb of the Moon" to depict how Classical philosophers chatted about the topic. One of his scholars raises the question of the Moon being a smooth, mirror-like disc—its light and dark patches being "images of the great ocean [on Earth] reflected in the moon"—instead of a globe somewhat like our own. Plutarch knew that settling exactly *what* the Moon is would be a first step to addressing whether or not life exists there. Later in his dialog, one of the philosophers named Theron says he would like "to hear about the beings that are said to dwell on the moon—not whether any really do inhabit it but whether habitation there is possible." He wonders what purpose the Moon would serve if it were a planet-like place yet unsuited to provide a home and sustenance for "men of some kind." In other words, he assumes that everything in the universe must serve *some* purpose. Theron next expresses doubts about its habitability: wouldn't its rotation and revolution cause any people to go "tumbling off the moon"? And what about "the heat and tenuousness of the atmosphere"?

Lamprias then sets Theron straight. He points out that large

regions of Earth are also uninhabited, but they help create "the most pleasant winds when summer is at its height." Likewise, the light reflected from the Moon "slackens the excessive torridity and harshness from the sun." Inhabited or not, the Moon has purpose. He goes on to say that its movements are "gentle and serene . . . so that there is no danger of falling and slipping off." In addition, the phases of the Moon moderate its temperature, and while he agrees that the atmosphere is "tenuous and translucent," there are arid regions on Earth that support life. Indeed, terrestrial life is vastly diverse, adapting to a broad range of environments, and lunar life could simply be "naturally adapted to a summery and rarified air." He urges Theron to imagine if we were barred from closely examining the sea. Hearing someone claim that there is life in its "bitter, unpotable, and salty water" would strike us as "a tissue of myths and marvels." Yet we know the ocean teems with life.[2]

Such conversations set the stage for imaginative fiction about journeys to the Moon and encounters with its inhabitants. One of the first that still exists is Lucian of Samosata's *True Story,* an ironic title in that it opens by admitting that the story is woven from "many monstrous and intolerable untruths" stated by earlier poets and scholars. Lucian tells of a band of voyagers who, after some terrestrial adventures, are whisked by a whirlwind up to the Moon. There, they find the Hippogypians, inhabitants who ride giant, three-headed vultures. The voyagers assist these beings in their war against the Sun people, meeting on webs spun by gigantic spiders. After the Hippogypians lose the war, the narrator provides extraordinary details about them, such as they gestate their young in their legs, turn to smoke when they die, live on frogs, and have detachable eyes. While some cite Lucian's work as the beginnings of science fiction,[3] it clearly leans heavily toward what we would now call fantasy and, specifically, the imaginary voyage.

The subsequent centuries introduced little change regarding the nature of the Moon and life upon it—until the 1600s, that is. In 1608, Hans Lippershey applied for a patent on his telescope. He wasn't awarded it, however, because others who had been working on similar devices came forward. The very next year, England's Thomas Harriot and Italy's Galileo Galilei observed the Moon through telescopes and mapped what they saw. Galileo's maps appeared in *Sidereus Nuncius* (1610), a very influential work that settled old debates about the Moon with empirical evidence gleaned telescopically. For instance, instead of "a smooth and polished surface," Galileo found that the lunar landscape was marked by

"vast protuberances, deep chasms, and sinuosities." Unfortunately, he doesn't address the possibility of lunar life in this work.[4]

Others *did* confront that possibility. Especially noteworthy among them is John Wilkins, whose scientific acumen made him a member of the Royal Society of London, whose religious devotion made him Bishop of Chester, and whose academic eminence made him a college head at both Cambridge *and* Oxford Universities. His book *The Discovery of a World in the Moone; or, A Discourse Tending to Prove that 'Tis Probable There May Be Another Habitable World in that Planet* (1638) puts forth a series of probabilities. One is that those light and dark spots on the lunar surface "shew the differences betwixt the sea and the land in that world," and another supports the prospect of "a sphere of grosser air about the moon." With water and air established, he then posits—albeit with great reserve—that "there are some inhabitants in that planet: for why else did providence furnish that place with all such conveniences of habitation as have already been declared?" Unlike Theron, Wilkins knew the Moon was planet-like, and this prompted him to propose it was inhabited. He did so in a work that infiltrated popular thinking as well as the imaginations of those who would write lunar-voyage fiction.[5]

Before turning to that fiction, it might be interesting to glance at a couple of lunar maps that had advanced those of Harriot and Galileo. The first was drawn by Johannes Hevelius and published in *Selenographia* (1647), and the second, drawn by F.M. Grimaldi, was published in Giovanni Battista Riccioli's *Almagestum novum* (1651). These maps reveal that early telescopes were simply not powerful enough to end the lunar life debate. As Michael J. Crowe writes, "Whereas Hevelius drew seas on the moon and advocated 'selenites' as he called his lunar inhabitants, Riccioli denied that water exists on the moon and above his map proclaimed that 'No Men Dwell on the Moon.'"[6] It's likely that the ability of telescopes to bring the Moon much closer into view—but *not* close enough to confirm life there—sparked fiction writers' imaginations.

Even before Wilkins' book and these later maps appeared, the astronomer Johannes Kepler had written the novel *Somnium,* published in 1634 but written well beforehand. Framed as a product of the narrator's dream, the story involves a mother and son who are told by a daemon, meaning a shadow-bound spirit, how daemons and select humans are able to journey to Levania (a.k.a. the Moon). The spirit then describes what such travelers will find: the Subvolvans, who live on the hemisphere facing Volva (a.k.a.

Earth) and the Privolvans, who never enjoy that reflected light. The indigenous inhabitants are giant in stature, their legs being longer than a camel's, yet snake-like in their habits. Their lifespans are brief, however. In the end, the narrator awakens from his bizarre dream.

This was followed by Francis Godwin's *The Man on the Moone,* published in 1638 but again written significantly earlier. This work is shorter than Kepler's—short enough to be the first selection in this anthology—yet it certainly competes in terms of offbeat creativity. After being left behind on the island of St. Helena, the protagonist discovers he can fly by harnessing birds. His "engine" is successful enough that he winds up on the Moon and, afterward, in China. Both locations have utopian elements, even though Godwin's Lunarians are markedly unequal in terms of heights, life spans, and the period they can resist an autonomic hibernation. Godwin also introduces a truly alien language and near-magical stones that, when properly used, provide heat, light, and weightlessness. Though the author might have had more serious goals in mind, he clearly also wanted to enchant his readers with some farfetched fun.

The trinity of 1600s lunar fiction is completed with Cyrano de Bergerac's *L'Autre monde ou les états et empires de la Lune* (1657), a.k.a. *The Other World: Comical History of the States and Empires of the Moon,* a.k.a. *A Voyage to the Moon*. Seeking to prove that the Moon is an Earth-like globe, Cyrano's protagonist—named Cyrano—designs a craft that will utilize dew-evaporation to drive flight. Unfortunately, he only makes it as far as New France (think Canada). He invents another machine, this one with wings and a spring, but it fails, too. Not until soldiers amuse themselves by affixing fireworks to his craft is he able to reach the Moon in what has essentially become a bottle-rocket-powered rocket ship! There, Cyrano encounters a variety of marvels, such as stones that become soft when walked upon, his hair growing back, the Garden of Eden, bestial people who walk on all fours, edible scents, and even the traveler in Godwin's work. This tale, like Kepler's and Godwin's, was born of telescopes confirming that the Moon looks enough like Earth to make the prospect of life there imaginable. The three authors, then, use this canvas to paint lunar aliens who are wildly and wonderfully different from Earthlings.

But this was to change.

The 1700s: The Moon as a Mirror Again

The previous three works might be called "the Moon as an Alien World" narratives in that the lunar inhabitants are presented as significantly *unlike* Earthlings. The appeal of this continued into the next century, as illustrated by the next selection in this anthology: a chapter from Ralph Morris's *The Life and Astonishing Adventures of John Daniel* (1751). This book cannot be called a "lunar voyage" novel exactly, since the Moon only serves as a waystation amid chapters about a promiscuous step-mother, a shipwreck, humanoid sea-creatures in the South Atlantic, a psychic seer in Lapland, and more. In *Voyages to the Moon,* a seminal work on fiction about celestial journeys, Marjorie Nicolson snubs Morris's lunar jaunt as unoriginal and having come "from his betters in the seventeenth century."[7] However, I see it as revealing how this type of tale retained its appeal and served as a bridge to similar tales in subsequent centuries.

That said, a new branch of lunar voyage fiction *did* emerge almost at the very start of the 1700s, one which I'll call the "Moon as a Mirror" tradition. Here, the author seems intent upon showing *similarities* between inhabitants from the Moon and the Earth for the purpose of satirizing the latter. To be sure, there are moments of satire in Cyrano's comical piece. For example, after the protagonist "had the boldness to affirm, That the Moon, from whence I came, was a World; and that their World was no more but a Moon," he is promptly threatened to be "condemned to the Water, for that's their way of rooting out Hereticks."[8] One is reminded of Galileo supporting the Copernican view that the Earth revolves around the Sun in *Sidereus Nuncius* and subsequently being tried and condemned for heresy.

However, in 1705, Daniel Defoe seemed far more devoted to satire—specifically aimed at English society—in his novel *The Consolidator*. The narrator recounts visiting China, where he discovers an ancient book. It was written by "the famous Mira-cho-cho-lasmo," who was "Born in the Moon, and [came] hither to make Discoveries, by a strange Invention, arrived to by the Virtuosos of that habitable world." With the lunar explorer's help, China had long ago achieved a level of knowledge that England prided itself as having achieved. Defoe's narrator feels compelled to visit the globe that possesses such great knowledge and travels there in a "Consolidator," which is "a certain Engine, formed in the shape of a Chariot, on the Backs of two vast Bodies with extended Wings,

which spread about 50 yards in breadth, composed of Feathers." The craft is made of fire-resistant material and runs on "a certain Spirit deposited in a proper quantity, to last out the Voyage." Upon arrival, the narrator learns about telescopes far surpassing those in Europe, and uses an especially powerful one to observe and critique England. For this reason, a solid knowledge of the English political history of this period is helpful to appreciate the work. Indeed, in a history of science fiction, Adam Roberts states that *The Consolidator* is unlike Defoe's other works for being "so constipated with satiric and contemporary-allegorical reference as to approach a state of absolute unreadability."[9] Ouch.

Several fiction writers followed Defoe's lead. For example, *A Voyage to Cacklogallina* (1727) is immersed "in contemporary *economics*. . . . This is a satire upon that great orgy of speculation, the South Sea Bubble," according to Nicholson.[10] While hunting for works for this anthology, I came across a fair number of this kind of story, and to be honest, they can be a bit of a slog to read—even if one is well versed in the historical context. I selected Ferdinand St. Julien's "A Journey to the Moon," published in 1798, because it keeps the focus general and my readers are likely to see the subjects of its satire—popular entertainment, religious hypocrisy, literary criticism, etc.—as still relevant today.

St. Julien's work is also important because it came in the wake of significant advances in astronomy. In 1753, Ruđer Josip Bošković reported that, if the Moon had any atmosphere at all, there was almost no density to it. In 1780, though, the implications of lacking breathable air didn't deter William Herschel. He defended his efforts to measure the Moon's mountains by asserting that greater understanding of "the construction of the Moon" can validate important conjectures, notably, "the great probability, not to say almost absolute certainty, of her being inhabited. . . ."[11] Not long afterward, Herschel and his sister, Caroline, oversaw construction of the Great Forty-Foot, a telescope that remained the largest of its kind for over half a century.

Perhaps the esteemed astronomer was eager to find further evidence that—despite its doubtful atmosphere and debatable water—the Moon *could* support life. Certainly, into the first decades of the coming century, others argued that it could.

The 1800s: The Waning of Lunar Life

One of the most prominent advocates of life existing on the

Moon in the 1800s was Thomas Dick, a Scottish minister with an interest in science. He hoped to resolve tensions between religion and astronomy in his 1823 book, *The Christian Philosopher; or, The Connection of Science and Philosophy with Religion*. There, he says this about the Moon:

> That this planet is inhabited by sensitive and intelligent beings, there is every reason to conclude, from a consideration of the sublime scenery with which its surface is adorned, and of the general beneficence of the Creator, who appears to have left no large portion of his material creation without animated existences; and it is highly probable, that *direct proofs* of the moon's being inhabited may hereafter be obtained, when all the varieties on her surface shall have been more minutely explored.

Dick was far from the first to suggest that God would not have created so many celestial bodies unless they were inhabited by those who could glorify Him, and he stuck with this argument in *Celestial Scenery,* published fifteen years later. Perhaps responding to increasing evidence that no water exists on the Moon, he admits that what once were considered lunar seas are mostly likely vast plains, but he also notes that "it is possible that small lakes or rivers may exist." He then balances the arguments for and against an atmosphere, surmising "it appears most probable that the moon is surrounded with a fluid which serves the purpose of an atmosphere," albeit one very different from Earth's, especially in how it refracts light and lacks both clouds and precipitation. Dick then restates his hope that telescopes will let us *"trace the operations* of sentient or intelligent beings, or those *effects* which indicate the agency of living beings."[12] It's fairly easy to see Dick as a man struggling to rescue the Moon people from both dehydration and asphyxiation.

Almost as if responding to Dick's hope, a Bavarian physician and astronomer named Franz von Paula Gruithuisen claimed to have observed signs of sophisticated life on the Moon. These observations were reported in his 1824 essay whose title translates to "Discovery of Many Distinct Traces of Lunar Inhabitants, Especially of One of Their Colossal Buildings." Besides that titular building, Gruithuisen says his telescope revealed evidence of vegetation, animals, roads, walls, cities, and even a star-shaped temple. Such claims, Crowe suggests, helped to make Gruithuisen a "professor of astronomy at Munich University" within two years. Nonetheless, even his colleagues supporting the notion of

populated planets in our solar system felt he had gone too far. Some outright rejected the claims, citing the lack of atmosphere. One scientific journal reported the findings and then asked if those in Gruithuisen's camp are "downright lunatics."[13]

All the while, fiction writers turned lunacy into entertainment and edification. We can begin a review of this century's imaginings of lunar life with a section of Washington Irving's *A History of New York* (1809), in which the "Moon as a Mirror" tradition popular in the 1700s is given a clever spin. Instead of a resident of Earth ascending to the Moon, Irving has *invaders* from the Moon descend to Earth. The scenario sharply satirizes the notion that European colonization was a benefit to the indigenous people of the Americas. This is a clear reminder that contesting such conquest has a very long history, and Irving's piece is the next selection in this anthology.

A few years later, another American author returned to the longer-standing tradition of sending a man to the Moon in a novel titled *A Flight to the Moon; or, The Vision of Randalthus* (1813), written by George Fowler. The work begins like St. Julien's "A Journey to the Moon" in that the narrator, upon admiring the Moon, is whisked there by a kind of lunar angel. Instead of a disappointingly familiar and mediocre world, though, Randalthus finds a community of beautiful, graceful people who are all equal in size and status, "owing, perhaps, to the equal station in which they are born, and equal advantages under which they are reared." Here, then, is a Godwinesque utopia—but with the stark class divisions replaced with American ideals of equality. Curiously, when Randalthus is asked about where he came from, he speaks at some length about Earth's atmosphere, wind, and precipitation, but Fowler only quickly alludes to the atmosphere "which adheres closely around the moon." The Lunarians, he discovers, are shocked to learn that the Earth, their moon, is inhabited—and even that they themselves live on a sphere. As Randalthus goes on to explain eclipses and tides to the Lunarians,[14] it becomes evident that Fowler sees his own readers as students in these and many more matters concerning Earth's inhabitants. Following Defoe, Fowler uses a trip to the Moon to gain a perspective on home.

I suppose the same could be said to underlie the anthology's next selection—specifically, drawing attention to humanity's small place in the cosmos—but this work has a very unique feel to it. "Native Sketches, No. XI" is an anonymous contribution to a 1828 magazine series, each of the installments being completely

independent. No. XI's inspiration comes from scientists who speculated that a planet's size and day-length determine the height of that planet's inhabitants. For example, in 1825, William Colquitt addressed the enormity of Jupiter and Saturn in combination with each planet's perpendicular axis. This, he says, provides enough sunlight to give Jupiter's inhabitants a

> stature and strength full five times greater than the strongest man on the face of the Earth; and their ages, in general, from twelve hundred to fifteen hundred years: but the inhabitants of the Planet Saturn, by reason of his great distance from the Sun, must be of prodigious strength, as well as stature, and cannot be much less than double the ages of those of Jupiter, and adapted with constitutions corresponding with their respective climates. Is it unnatural to suppose, that the inhabitants of those great Planets are upright, and not much unlike the human frame,—and covered with strong hair, yellow or white, beautifully and tastefully spotted or striped, like a leopard or a zebra?[15]

This is an extreme example of a scientist succumbing to wild speculation, but at times, the scientists advocating extraterrestrial life in the 1800s seem more creative than the century's creative writers.

The next work presented in this anthology is by Edgar Allan Poe, but it might be interesting to first glance at the novel said to be his inspiration. George Tucker's *A Voyage to the Moon* (1827), says J.O. Bailey, conforms to "the moon-voyages from the time of Godwin onward, adding to the established patterns several features of importance, among them the use of a counter-gravitational substance for interplanetary transportation, and the idea that a moon voyager must cross an airless void in bitter cold." Bailey then explains that Tucker's novel helped shape Poe's 1835 tale "Hans Phaall—a Tale" (later retitled "The Unparalleled Adventure of One Hans Pfaall"). Into this otherwise comic story, Poe weaves considerable scientific information on how one might reach the Moon via balloon. We only get scant description of what Phaall would have found there because, as Bailey explains, "Poe intended to continue the story in a second part," one that never materialized.[16] Still, we get clues about these inhabitants, who are without ears or speech (presumably due to the problems of sound traveling through a rarified atmosphere) yet whose lives correspond to and comingle with inhabitants on Earth. One might wonder if the author had been imagining a "Moon as Alien World" or a "Moon as

a Mirror" narrative. Perhaps, being Poe, he was planning to combine the two to create something very new.

The same year that Hans Phaall's balloon rose before the public, a New York newspaper called *The Sun* ran a series of articles about an incredible discovery. (The articles were quickly reprinted in England in book form.) Purportedly, what Thomas Dick had said would likely never happen *had* happened: John Herschel, William Herschel's son, had devised a telescope so powerful that he was able to observe, not just *indications* of life on the Moon, but that life *itself!* Herschel's team had spotted various birds hunting fish, giant bison and miniature zebras roaming the plains, beavers walking upright, and even humanoids interacting and then flying away with their bat-like wings. The reports caused quite a stir, but they were soon revealed to be a hoax created by Richard Adams Locke. When reprinted as a historical curiosity about two decades later, William Griggs explained that the reports were

> written expressly to satirize the unwarranted and extravagant anticipations upon this subject, that had been first excited by a prurient coterie of German astronomers, and thence aggravated almost to the point of lunacy itself, both in this country and in England, by the religio-scientific rhapsodies of Dr. Dick. At that time, the astronomical works of this author enjoyed a degree of popularity, in both countries, almost unexampled in the history of scientific literature.[17]

When Locke's popular articles were exposed as unrestrained fabrication, the embarrassment, anger, and laughter of anyone who had been fooled might have accelerated the growing doubts and disbelief regarding lunar life.

The articles are included here, followed by two stories from the 1840s. The first suggests that even traditional fiction was treating life on the Moon as something silly. The anonymous "Loves of the Lunatics" (1844) might qualify as the wackiest extraterrestrial romantic comedy written in the nineteenth century. On the other hand, "The Adventures of Wilhemus Wyndert" (1846) feels something like a tall tale that one might expect from, say, Mark Twain. The setting is a town where residents wonder which is larger and farther away—the Sun or the Moon?—and the adventure ends up very likely being the title character's fevered fantasy. Along the way, things turn serious, and the piece becomes a Christian lament on the fallen state of humanity, a condition shown to be exclusive to Earth. As with Defoe's novel, the focus is on critiquing Earthlings

rather than imagining Lunarians.[18]

Unfortunately, another intriguing work from the 1840s fails to qualify for this anthology. Despite its title, John Leonard Riddell's *Orrin Lindsay's Plan of Aerial Navigation, with a Narrative of His Explorations of the Higher Regions of the Atmosphere, and His Wonderful Voyage Round the Moon!* offers no imaginary depictions of lunar life. Its Moon is portrayed as being dead. After Lindsay surveys it, he reports: "Probably the air is more rarified than the nearest approach to a vacuum which we can produce in our air pumps. . . . There were no seas, lakes nor rivers of water; indeed not a drop of water was anywhere visible. There were no indications of animal or vegitable [*sic*] life; but all seemed a cold, dry, dreary, wild and barren waste."[19] While the Moon chapter in George Griffith's *Stories of Other Worlds* (1900) similarly depicts a dead globe in its early scenes, it ends with haunting images of life barely lingering. I felt it a fitting final piece of fiction for this compilation.

Of course, H.G. Wells revitalized lunar life in *The First Men in the Moon* (1900), but he knew that he was offering something a bit different to his readers than a fictional adventure in a real but uncharted land. Wells later explained that this work was among a group of his novels that "do not aim to project a serious possibility; they aim indeed only at the same amount of conviction as one gets in a good gripping dream. They have to hold the reader to the end by art and illusion and not by proof and argument, and the moment he closes the cover and reflects he wakes up to their impossibility."[20] By the 1900s, then, the average reader probably considered life on the Moon a fantasy—exciting and thrilling, but the stuff of dreams.

Telescopes aimed at the Moon, in essence, had become ray-rifles. Over the course of the 1800s, their increased power eradicated virtually all traces of lunar life. For instance, in 1847—the same year that Riddell was writing fiction about a dead Moon—Harvard University had completed work on a telescope with an unprecedented 15-inch lens. (It was used to take the first telephoto images of the Moon.) In 1866, the Chicago Astronomical Society commissioned one with an 18 ½-inch lens, and seven years later, a 26-inch-lensed telescope was installed at the Naval Observatory in Washington D.C. The latter instrument brought the moons of Mars into view. The Americans were certainly doing well in making astronomical advances.

Yet they were building on the work of earlier scientists, and my research gives me the impression that a telescope constructed in Ireland back in 1845 received more international attention of any of

those following. It had been commissioned by William Parsons, the Third Earl of Rosse, and dubbed the "Leviathan of Parsonstown." Its aperture was 72 inches, compared to the 49½ inches of William Herschel's Great Forty-Foot.[21] The enhanced magnification, according to reports, allowed Parsons to confidently conclude that the Moon exhibited "no signs of habitations such as ours—no vestiges of architectural remains to show that the moon is or ever was inhabited by a race of mortals similar to ourselves." Parsons had seen neither "green fields" nor any body of water. Instead, "all seemed desolate." The news spread far and wide,[22] and it must have had a profound impact on popular opinion as well as the few remaining scientists keeping an open mind on the subject.

When did the stance that there is no life on the Moon reach cultural consensus, then? Pinpointing a year or even a decade seems futile, but signs of change appear in a variety of ways. First, as the Leviathan of Parsonstown was making international news in the mid-1840s, some children might have been confused when reading *The Young Astronomer; or, The Facts Developed by Modern Astronomy, Collected for the Use of Schools and the General Reader* (1846). This guidebook reiterates what Dick had said: "It is the general opinion of Astronomers that the Moon is inhabited. Though we cannot hope by any increase of telescopic power, within the limits of probability, to see inhabitants of the Moon, it is not unreasonable to suppose that their works may be seen." On the other hand, three decades later, *The Sun and the Moon* was released to take advantage of astronomy's ability "to engage the attention of the young, or to fill their minds with so profound a sense of the wisdom, love and power of the Creator." Here the anonymous yet religious-minded educator declares that, "whatever may have been the case in the past, it can scarcely be believed that life at present exists on the lunar surface. It is now known that the Moon has no atmosphere. This is a fact proved by the spectroscope. It has neither oceans, seas, nor rivers. . . . Its dreary waterless solitudes cannot be the home of life."[23] Here's at least a bit of evidence that young, impressionable minds were being reshaped in favor of a lifeless Moon by the 1870s.

One might look at the shift in terms of generations, too. At the century's mid-mark, John Herschel was agreeing that telescopes "must be greatly improved, before we could expect to see signs of inhabitants" on the Moon. A couple of sentences afterward, though, he topples what his father had called an "almost absolute certainty": "Owing to the want of air, . . . it seems impossible that any form of

life, analogous to those on earth, can subsist there. No appearance indicating vegetation, or the slightest variation of the surface, which can, in our opinion, fairly be ascribed to change in season, can any where be discerned."[24] Just as a new generation of students were being told the Moon is without life, a new generation of astronomers seemed to be discounting earlier assumptions. In Herschel's case, one astronomer was *literally* questioning his forebears.

In another case, an astronomer was rethinking his *own* acceptance of earlier convictions. Richard A. Proctor admitted in 1882 that he had changed his mind about life, not on the Moon specifically, but on globes throughout our solar system. His earlier writings, he owns, had adhered to "the old-fashioned views respecting the planets, views first advanced when the Copernican theory had just been established, but entertained and effectively advanced even by such men as the elder and younger Herschel." Once telescopes helped establish that the planets are like Earth, "it was natural enough to regard them as likely to be . . . the abodes of living creatures." However, study had since revealed that the planets are actually very *different* from Earth in terms of age, temperature, and mass. Saturn and Jupiter especially illustrate this. "We turn a telescope upon either of these planets," writes Proctor, "and at once we see that they are entirely unlike our earth in appearance. . . . No trace of any tracts can be seen which could for a moment be regarded as regions of land and water." Instead, we only observe evidence of "a vaporous, cloud-laden atmosphere." With a glimmer of hope, he concludes that the two giant planets "are as yet only in the stage of preparation to become fit abodes for living creatures."[25] In other words, Proctor advanced from assuming extraterrestrial life exists throughout the solar system to believing that planets *have been* habitable—or *will become* habitable—as they evolve over millions of years.

This view afforded a new way to understand life on the Moon, a view underlying all the science fiction movies about aliens coming to Earth to escape their own dying planet. The same concept underlies Proctor's essay "Is the Moon Dead," found in the appendix of this book. There, he explores the question—not *has life ever existed on our satellite?*—but *could it have at some point?* He wisely leaves "the questions whether she ever actually had inhabitants, and what (if she had) their nature may have been, to the imagination of the reader."[26] And this is where fiction writers step in to assist, even those more interested in making those lunar

inhabitants in the image of their own people on Earth.

In editing these works for this anthology, I have adapted the language somewhat to general readers of the twenty-first century. For instance, I broke especially long paragraphs and sentences, and tinkered with antiquated punctuation. I uniformly capitalized Moon, Earth, and Sun when the reference is to those bodies in our solar system (as opposed to, say, one of the moons of Mars, a handful of earth, or the sun bouncing off the water). In rare cases, I replaced obsolete words with something more current. I especially gave Godwin's *The Man in the Moone* a good scrubbing, and those stalwart enough to prefer the original language of this important work are encouraged to locate the 2009 Broadview edition of it, edited by William Poole. Despite my editorial meddling, much of the charm and strangeness of the original works still shine through as brightly as a full Moon on a clear night.

Speaking of the shiny Moon, the next time you happen to look up and spot our beautiful natural satellite, take a moment to wonder. Wonder about what it was like to see that globe before people of Earth had landed there—even before people had scanned it with telescopes. And wonder about *what* was too far away to see up there.

More importantly, wonder about *who* was too far away to see up there.

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[1] The claim that Anaxagoras was the first to accurately explain eclipses is explored in Daniel W. Graham and Eric Hintz, "Anaxagoras and the Solar Eclipse of 478 BC," *Apeiron* 40.4 [Dec., 2007] pp. 319-44.

[2] Plutarch, *Moralia,* translated by Harold Cherniss and William Helmbold, Vol. XII (Harvard UP, 1957) pp. 41, 157-79.

[3] Lucian of Samosata, *True History,* translated by Francis Hicks ("Privately printed," 1894) pp. 25-71. On Lucian's important place in science fiction, see Adam Roberts, *A History of Science Fiction* (Palgrave Macmillan, 2006) p. 27.

[4] Galileo Galilei, *The Sidereal Messenger,* translated by Edward Stafford Carlos (Rivingtons, 1880) p. 8. In his other writing, Galileo's comments on extraterrestrial life ranged "from rejection to cautious reserve," says Michael J. Crowe in *The Extraterrestrial Debate, 1750-1900* (Dover, 1989) p. 12.

[5] John Wilkins, *The Mathematical and Philosophical Works of the Right Rev. John Wilkins,* Vol. I (C. Whittingham, 1802) pp. 55, 75, and 101. The pervasive influence of Wilkins on "cosmic voyage" fiction is discussed by Marjorie Nicholson in *Voyages to the Moon* (Macmillan, 1948) pp. 95-95. Nicholson traces the influence of both Plutarch and Lucian on fiction about lunar excursions. Other Classical sources of inspiration, she says, are Platonic myths, especially that of Phaedrus, and Cicero's *Somnium Scipionis*. Much later works—including Rabeais' *Pantagruel* (c. 1532), Ariosto's *Orlando Furioso* (1532), and Cervantes' *Don Quixote* (1605)—are also explored.

[6] Crowe, p. 14.

[7] Nicholson, p 177.

[8] Cyrano de Bergerac, *A Voyage to the Moon,* translated by A. Lovell (Doubleday and McClure, 1899) pp. 138-39.

[9] Daniel Defoe, *The Consolidator; or, Memories of Sundry Transactions from the World in the Moon,* (Benj. Bragg at the Blue Ball in Ave-Mary-Lane, 1705) pp. 16-17, 36. Roberts, p. 80. Largely agreeing with Roberts, Nicholson describes this novel as "very familiar" in its lunar geography and climatology and as "only another of Defoe's persistent attacks upon abuses in England" in its lunar politics and economics. However, with a touch more mercy, she gives it points for "its anticipation of scientific inventions for which England was still seeking," citing Moon people's telescopes that don't just magnify but that see into the future and beyond death, p. 187.

[10] Nicholson, p. 99. The "Moon as a Mirror" tradition lasted well into the 1800s, at least, in the United States. Examples are James Kirke Paulding's "Journal of a Late Traveler to the Moon," *New-York Mirror,* 7 June 1834, pp. 389-90 and 5 July 1834, pp. 6-7; the anonymous "Recollections of Six Days' Journey in the Moon," *Southern Literary Messenger* 10.7 [July 1844] pp. 434-37 and 10.8 [Aug. 1844 pp. 492-95; and Pilgrim Progress, Jun's "Supplementary Visit to the Moon," *United States Review* 2.8 [Aug. 1853] pp. 125-43.

[11] Ruđer Josip Bošković, *De lunae atmosphaera dissertatio* (Roma, 1753). See also Crowe, p. 157. William Herschel, "Astronomical Observations Relating to the Mountains of the Moon," *Philosophical Transactions* 70 [Dec. 1780] pp. 507-08.

[12] Thomas Dick, *The Christian Philosopher, or, The Connection of Science and Philosophy with Religion* (G. & C. Carvill, 1826) pp. 210-11. Thomas Dick, *Celestial Scenery; or, The Wonders of the Planetary System Displayed* (Harper, 1838) pp. 266-71. The view that the Moon is devoid of water was forcefully promoted by Johann Heinrich von Mädler and Wilhelm Beer in *Der mond nach seinen kosmischen und individuellen verhältnissen* (S. Schropp, 1837). They also affirm Bošković's stance that there is no appreciable lunar atmosphere.

[13] Crowe, pp. 203-10. The barb regarding lunacy appears in "The Moon and Its Inhabitants," *Annals of Philosophy* 12.28 [Dec. 1826] pp. 469-70.

[14] George Fowler, *A Flight to the Moon: Or, The Vision of Randalthus* (A. Miltonberger, 1813) pp. 11, 33.

[15] William Colquitt, *Essays on Geology and Astronomy; The Physical Formation of the Planets, the Process Whereby Magnetism and Motion Keep Them in Their Orbits; with the Way to Find the Distances of the Planets from the Sun, as Deduced from the Earth's Distance.* (T. Kaye, 1825) p. 78.

[16] J.O. Bailey, *Pilgrims Through Space and Time: Trends and Patterns in Scientific and Utopian Fiction* (Argus, 1947) pp. 45-46.

[17] The English book version is *Some Account of the Great Astronomical Discoveries Lately Made by Sir John Herschel at the Cape of Good Hope* (Effingham Wilson, 1836). William N. Griggs, Introduction, *The Celebrated "Moon Story," Its Origin and Incidents* (Bunell and Price, 1852) p. 8.

[18] An earlier didactic story—a far more evangelical one—is John Campbell's "Journey to the Moon, and Interesting Conversations with the Inhabitants Respecting the Condition of Man" (Printed by Howard Evans, 1815). The narrator's method of travel is worth noting. While gazing at the Moon through a telescope, he feels himself ascending. The traveler quickly realizes that the instrument *itself* is carrying him! "Happily," he explains, "I kept fast hold of my telescope notwithstanding my tremor" (p. 1).

[19] J.L. Riddell, *Orrin Lindsay's Plan of Aerial Navigation* (John C. Nobel's, 1847) p. 21.

[20] H.G. Wells, Preface, *Seven Famous Novels* (Knopf, 1934) p. vii. A wonderful anthology of 1900s fiction about the Moon is *Moonrise: The Golden Age of Lunar Adventures,* edited by Mike Ashley (British Library, 2018).

[21] These are both *refracting* telescopes, meaning they have a lens at the front, a tube, and an eyepiece. The American telescopes mentioned in the previous paragraph are *reflecting* telescopes. The light enters one end, hits a parabolic mirror at the other, and is directed out through a "secondary mirror" to an eyepiece on the side. Reflectors originally offered certain image advantages over the older refractors, and they remain the standard for astronomical study today.

[22] Anonymous, "The Telescope with Some Account of the Earl of Rosse's Reflecting Telescopes," *Sharpe's London Magazine* 2.47 [19 Sept. 1846] p. 332. The news about the desolate moonscape was also reported in periodicals as diverse as "The Moon not Inhabited," *American Penny Magazine* 2.35 [3 Oct. 1846] p.550; "The Moon in Lord Ross's Telescope," *South Australian,* 20 Nov. 1846, p. 7; "The Moon Now, and the Earth at Creation," *Western Baptist Review* 3.5 [Jan., 1848] pp. 174.

[23] John S.C. Abbott, *The Young Astronomer; or, The Facts Developed by Modern Astronomy, Collected for the Use of Schools and the General Reader* (Pratt, Woodford 1847) p. 44-45. Anonymous, *The Sun and the Moon: Their Physical Character, Appearance, and Phenomena* (T. Nelson, 1877) pp. v, 83.

[24] John Herschel, *Outlines of Astronomy* (Longman, Brown, Green, and Longmans, 1851) pp. 261-62.

[25] Richard A. Procter, "The Giant Planets" *Gentlemen's* 252.4 [April, 1882] pp. 445-47, 459.

[26] Richard A. Proctor, "Is the Moon Dead?" *Cornhill* 35 [June, 1877] p. 720. While some might consider Proctor's essay to be dry in spots, it had been judged interesting enough to be reprinted in *Littell's Living Age* 19.1728 [July 28, 1877] pp. 222-32; *Eclectic Magazine* 26.2 [Aug., 1877] pp. 186-97; and *Popular Science Monthly—Supplement* (D. Appleton, 1877) pp. 275-84.