

<http://www.cloudynights.com>

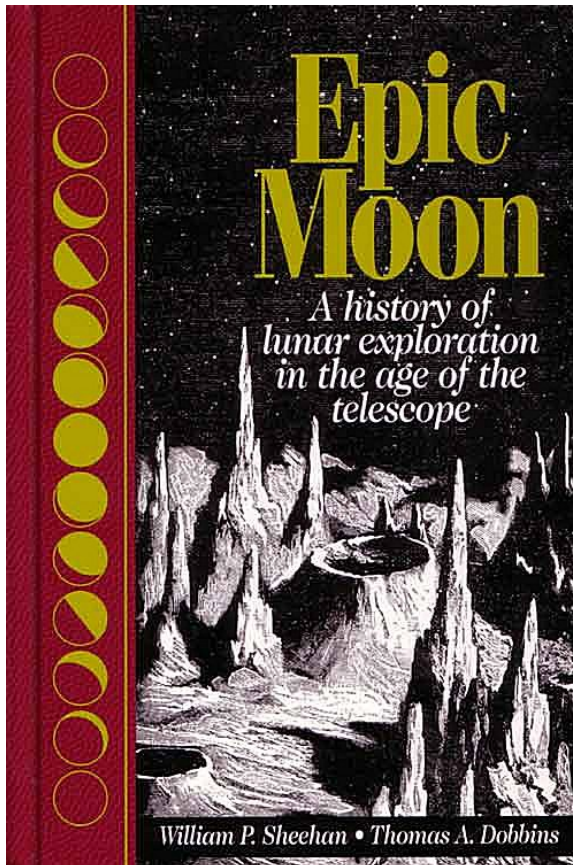


All rights reserved. No part of this article may be reproduced or transmitted in any form by any means without the prior written permission of the publisher.

Epic Moon – A history of lunar exploration in the age of the telescope

William P. Sheehan and Thomas A. Dobbins

3/2004 Tom Trusock - [Click to e-mail author](#)



Level	Lunatics – intermediate, Astronomical Historians – beginner
Age	15 and up
Pages	363 pages
Type / Price	Hardcover / \$29.95
Publisher	Willmann-Bell, Inc
Summary	An entertaining and lavishly illustrated historical tale of the personalities involved in exploring and mapping the moon from Galileo through Apollo. While not an observing handbook, the reader often comes away from it with a list of features to explore.

I'm one of those who can't help thinking of the Apollo program and those lucky few moonwalkers when gazing skyward. Like many, I tend to forget that the real age of lunar exploration started long before Apollo 11, when ancient man first looked to the night sky.

Epic Moon reminds me.

After a (very short) nod to ancient scientist/philosophers, Sheehan and Dobbins waste no time introducing Galileo, one of the prime movers of the early modern astronomical world. Surprisingly, we learn that it was not Galileo who first turned a telescope on the moon, but rather an Englishman. Thomas Harriot first saw a five day old moon at a magnification of 6x on July 26, 1609. Although Galileo was to use a 20x glass, he wasn't to point this

instrument towards the moon till November 30, 1609, many months later.

The 1600's were an amazing century of astronomical discovery driven by the age of sail and exploration. The chief problem faced by early terrestrial explorers was in accurately determining their location – latitude and longitude. Latitude was fairly easy to determine, but longitude was another matter altogether. Many of the early telescopic moon explorers were obsessed with mapping Luna to establish a workable method of determining longitude (the method of lunars) for the hordes of navel and merchant vessels that roamed the seas. In 1598 the king of Spain offered a prize (6000 ducats) for anyone who succeeded in finding a method to determine the longitude of a ship at sea. Since the theory of lunars was highly favored, this quite possibly marked the beginning of mankind's first "Moon Race".

Things got complicated when early observers discovered that the moon does not stay quite fixed. Instead, it sways and nods back and forth through both it's latitude and longitude – this motion, called libration, allows earthbound observers to see (and map) some 59% of the lunar surface. Before a workable method of lunars could be found, libration had to be accounted for. The quest to model libration, combined with the ever shifting angles of illumination of surface features, marks the beginning of the greatest obsession of lunar science, and one that continued till the 20th century: the search for lunar change.

Throughout the book, Sheehan and Dobbins remind us that the history of lunar exploration and discovery is

populated by amateurs, giants, geniuses and crackpots, and introduces us to its main characters. And interestingly, we find it is not uncommon for the geniuses and crackpots to change places from time to time.

One of the more entertaining figures outlined in *Epic Moon* is the Bavarian astronomer Franz von Paula Gruithuisen. Like others before (and after) he believed that Luna was habitable, that it possessed an atmosphere and ecosystem, complete with flora and fauna. Clefs, and Rilles he referred to as Einfurchugen (furrows) and surmised they were broad tree-lined roadways constructed by the local fauna and used by the Selenites as roadways for their transportation system. (Canals anyone?)

Gruithuisen's most amazing "discovery" came while observing the Sinus Medii region with his 2.4 inch refractor on July 12, 1822. That evening Gruithuisen discovered a "structure" he was to later call the Wallwerk. Gruithuisen's Wallwerk was a strangely regular object, composed of several interlocked structures, with large portions breaking off at 45 and 90 degrees. The Wallwerk, in Gruithuisen's mind, called for an intelligent designer. Far from rushing into print with his seminal discovery, Gruithuisen didn't publish a full account of his discoveries till 1824, and then under the lengthy title "*The Discovery of many distinct evidences of Lunar Inhabitants, in particular a colossal Artificial Structure by the same.*" Spurring on astronomers and would be astronomers alike, Gruithuisen embarked on something like a public relations tour and personally showed the Wallwerk to astronomers throughout Europe. Professionals weren't the only ones

enthralled by the idea of intelligent lunar inhabitants; the popular press ensured the public's imagination was also fired up about this "discovery" of life on the moon.

As a mark of the times, an inspired Lord Tennyson wrote these lines commemorating Gruithuisen's discovery:

*I saw
The Moon's white cities, and the opal width
Of her small, glowing lakes, her sliver heights
Unvisited with the dew of vagrant cloud,
And the unsounded, undescended depth of
Her black hollows. Nay – the hum of men
Or other things talking in unknown tongue
And notes of busy life in distant worlds.*

In fact, so popular was the idea of intelligent otherworldly life, the New York Sun published a faux series of articles in 1835 which (while the hoax lasted) gave it the largest circulation of any paper on the planet. Reminiscent of stories found in checkout line tabloids today, this "Moon Hoax", was written by Richard Adams Locke and purported to be a serial authored by none other than Sir John Herschel (observing at the Cape at the time). Sir John was said to be using a supertelescope to scrutinize not only the "Moon's white cities" but the inhabitants themselves! Before being unmasked as a hoax, it was reprinted as a pamphlet and sold more than 60,000 copies. (Locke must have laughed all the way to the bank.) Initially amused, Sir John soon found himself being pestered from all corners regarding "that ridiculous hoax about the moon."

Other topics *Epic Moon* covers include (but are not limited to): the Linne controversy, theories on the formation of

the moon and its features, the impact versus volcanism arguments, the colorful William Henry Pickering – "the Madman of Manderville", and Fauth's theory of an ice covered moon. *Epic Moon* closes with a summary of what we've recently learned thanks more recent efforts of NASA.

While it's certainly not an observing handbook, I often find myself struck with an urge to try to find the Wallwerk, the Lady's Head, the Twilight Extensions of the Horns, observe Linne (just in case it decides to drop out of sight again), or others mentioned in the text, as if decades later, I can get some idea of just what the fuss was all about. With the occasional aid of my averted imagination, sometimes I can.

This lavishly illustrated and extremely well documented tome is interesting reading for any modern lunatic who wonders about those who have gone before. If you are at all interested in astronomical and lunar history, this book is a gem. You will be introduced to many colorful characters – both crackpots and giants, and gain an insight into how the moon itself plays a role in mankind's history. After *Epic Moon*, you won't look at Luna in the same light. *Epic Moon* provides a historical backdrop and context to many of the locations familiar to an intermediate lunar observer.

Epic Moon is recommended reading for those lazy days and cloudy nights, but it's not designed for use at the telescope. This book is a must for the lunatic who wants to gain a deeper understanding of the moon and its role throughout history.

Related Resources

The Moon Hoax - <http://www.museumofhoaxes.com/moonhoax.html>

Introduction to the Lunar Distance - <http://members.verizon.net/~vze3nfrm/Intro.htm>

The Linne Controversy - <http://www.astrosurf.com/lunascan/Lincont.htm>

[Discuss this Article in the CloudyNights Forums](#)