

# Who Knew?

HISTORY OF SCIENCE

## Publish or Perish

*The untold story of Thomas Harriot, the greatest scientist you've never heard of*

Everyone knows Galileo was the first astronomer to point a telescope at the night sky. But like many facts that everyone knows, this one isn't true. Precedence should probably go to Thomas Harriot. **What Harriot didn't do was publish his observations:** Being first is important, but so is publicity.

Harriot was an Englishman best known for writing an early natural history of North America. In 1585 he sailed west for his sponsor, Sir Walter Raleigh, who hoped to found a colony in the New World. Harriot's account, *A Briefe and True Report of the New Found Land of Virginia*, is considered an ethnographic treasure for its descriptions of Native Americans. He also enthused about the health benefits of smoking tobacco: "It purgeth superfluous fleame & other grosse humors, openeth all the pores & passages of the body." Smokers, he said, rarely get sick.

Harriot went on to become one of the greatest scientists in the world—but one who never quite got his due. He made advances in algebra and optics. He discovered Snell's law of refraction before Snell did (and quite obviously didn't get the credit).

In August 1609 Harriot used a telescope to look at the moon, magnified six times. Not until four months later did Galileo, in Padua, Italy, study the moon with his telescope. Then, in December 1610, Harriot became the first Westerner to observe sunspots through a telescope

(naked-eye observations in China beat Harriot's by about 1,800 years).

And yet he didn't publish his work. Galileo, who more fully appreciated the telescope's possibilities, seized the moment. He discovered four moons of Jupiter and saw that Venus has phases, like our moon. He peered into the Milky Way and saw, for the first time, that it's made of countless individual stars.

And Galileo published. His first book on his new astronomical studies, *The Starry Messenger*, came out just ten days after he made his final observations. Throughout his career he had the intellectual chutzpah to trumpet the implications of his work. Before Galileo, few dared to think of the moon or the sun as blemished or imperfect. He wasn't afraid to say *this changes everything*.

Harriot also came up with bold hypotheses. But he struggled to put the final touches on his research. He stalled, tinkering with details. Maybe it was because, as a kind of house scientist to noblemen, he was not expected to publish. Or maybe it was his personality. A friend tried to appeal to his ego, writing to Harriot that his procrastination "hath rob'd you of . . . glories." But he still had difficulty completing projects.

On his deathbed Harriot asked that his executors organize his scientific papers. Didn't happen. His manuscripts were lost for more than 150 years and finally discovered amid some horse stable accounts. His papers are notoriously disorderly; scholars have spent decades trying to make sense of them.

Oh, and he was wrong about smokers rarely getting sick. Around 1611 cancer appeared in his nose and, after many miserable years, killed him.

—Joel Achenbach

WASHINGTON POST STAFF WRITER

### IT MATTERS

**Galileo didn't publish his observations in scholarly journals.**

They didn't exist in his lifetime. Scientific publishing as we know it, with experts reviewing manuscripts before they're made public, developed slowly before the 20th century. Today scientific peer review still matters. The sheer volume and specialization of modern research means that even a brilliant editor of a narrowly focused journal needs help evaluating submissions. Reviewers report on whether articles show sound investigative techniques, logical analysis, and plausible conclusions. Though most scientists recognize flaws in the process—it can tend to slow the spread of new data and stifle original thinking—peer-reviewed publications remain the gold standard: reliable sources for credible science.

—Lynne Warren

### WEBSITE EXCLUSIVE

Learn more about Thomas Harriot—and find a link to Joel Achenbach's work—at [nationalgeographic.com/ngm/resources/0305](http://nationalgeographic.com/ngm/resources/0305).