

Galileo: the Science, the Man and the Truth

"Can any human being reach that kind of light?"

I call on the resting soul of Galileo King of night vision, king of insight."

— Galileo by the Indigo Girls

BY MAUREEN ARGES NADIN



COSMIC NEIGHBOURHOOD

THE exciting and multifaceted space program that we know today owes its existence to the determination and vision of a number of scientists who lived, worked and dreamed in a time where new and radical ideas that challenged the prevailing world view were not always embraced.

Long before there was Einstein and the rocket scientists, there were the Renaissance astronomers, physicists and mathematicians who dared to posit that the Universe was far vaster than what was believed at the time.

Their names are well known: Nicolas Copernicus, Johannes Kepler and later — Isaac Newton, to name a few. But none have captured the popular imagination as much as Galileo Galilei.

Galileo was born on Feb. 15th, 1564 in Pisa, Italy and this year is the 450th anniversary of his birth. Galileo the scientist and the man still hold a compelling fascination for us. It is not surprising to see his name pop up in contemporary pop music and culture: his legacy as not just a brilliant scientist but a philosopher and truth seeker have endured through the ages. His science is legendary but who was Galileo the man?

One of the world's most famous scientists was actually the son of Vincenzo Galilei, a musician and music theorist. One can't help but

wonder if he was a disappointment to his family when, perhaps drawn by celestial music, he dropped out of medical school to study mathematics and astronomy. The Year in Space website/newsletter highlighted the irony of this factino by entitling their tribute article College Dropout Moves the World.

Galileo not only moved the world, he rocked the world of the 17th century!

Although Galileo is often mistakenly credited with inventing the telescope, Dutch spectacle maker Hans Lippershey actually did that in 1608.

But Galileo was the first to use the telescope to look at the night sky and it was the beginning of his meticulous observations that would lead him to the discovery of Jupiter's four largest moons, Io, Ganymede, Callisto and Europa, known collectively as the Galilean satellites. (we now know that Jupiter has more than 60 moons).

His discovery of bodies that weren't stars orbiting another planet provided further evidence of what Galileo already suspected — that the Earth was not the centre of the solar system, a belief that was not consistent with the view of the Catholic Church at the time.

He openly supported the Copernican "heliocentric" theory that the Sun was the centre of the solar sys-



FILE PICTURE

Galileo Galilei has his eyes on the stars over four centuries ago.

tem and all planets revolved around the Sun as opposed to the Church's implacable belief that the Earth was the centre of the solar system — known as the geocentric theory. His writings on the subject put him in the cross hairs of the Roman Inquisition and he was formally tried and denounced as a heretic in 1632.

It's tempting to imagine Galileo as a brooding rebel who relished his martyrdom as a heretic but he was in fact a devout Christian and Catholic and it must have pained him deeply to oppose his Church. Sick and frightened for the safety of his family, the great man reluctantly recanted his support of the Copernican theory and spent the rest of his life under house arrest.

Legend has it that, as he was rising from his knees after his testimony, he was heard to mutter under his breath; "Eppur si muove." Translated, it means 'yet it still moves.'

Astonishingly, the same Church that owns and operates some of the largest telescopes in the world at the Vatican Observatory and has hosted

an International Conference on Astrobiology (the study of life in the Universe) didn't officially pardon Galileo until 1992 — 350 years after his death!

It's a classic case of "better late than never" but one that has always puzzled me. Galileo remains a symbol of the possibility of integrating faith and science, a perceived dichotomy that begs to be resolved as we enter this new age of scientific discoveries that will most certainly challenge existing religious doctrine.

Like Galileo, I feel no need to reconcile my faith with my interest in science and am inspired by his famous observation:

"I do not feel obligated to believe that the same God who has endowed us with sense, reason and intellect, intended us to forego their use."

Happy 450th to the great Galileo.

Maureen Arges Nadin is a freelance writer and space enthusiast. Cosmic Neighbourhood appears the second Sunday of each month.