Le Moyne professor, a former Vatican Observatory director, devotes his career to both faith, science
Some people may think religion and science don’t mix. They are like two orbs that co-exist in space, but never cross each other’s path.

Not so for the Rev. George Coyne. He’s lived fully in both realms his whole life. As a man of faith, the Baltimore native joined the Jesuits in 1951, studied sacred theology and became a Roman Catholic priest. As a man of science, he earned a doctorate in astronomy and became an expert on close binary star systems and Seyfert galaxies.

He soon found the perfect meeting place of faith and science: The Vatican Observatory.

For nearly three decades, he was the observatory’s director, launching new educational and research initiatives and urging the Roman Catholic Church to base its decisions there on solid science. In addition to carrying out planetary research, he helped Pope John Paul II work through several endeavors that shaped the church’s stand on key scientific questions.

He retired from the observatory at the beginning of 2012 and brought his expertise to Le Moyne College, where he is the McDevitt chair of religious philosophy. He continues his advocacy for the notion that a religious faith and the scientific method can not only coexist, but complement each other.

He agreed to share some of his experiences and outlook. The following has been edited for length.

**Where is the Vatican Observatory?**

The administrative headquarters are at the Vatican Villas and Papal Palace at Castel Gandolfo, Italy. The Italian site also holds a research center with a meteorite laboratory, library and computer facilities, as well as several telescopes which are no longer active research instruments but are used for public tours.

The offices of the Vatican Observatory Research Group are housed at the Department of Astronomy of the University of Arizona in Tucson. The Vatican Advanced Technology Telescope is located on Mount Graham, about 100 miles northeast of Tucson.

**How did you come to work at the Vatican Observatory?**

In 1978, at the death of the director, I was called by Pope John Paul I after he had consulted with my superiors at the Jesuit headquarters in Rome. I was acting director and head of the University of Arizona’s Steward Observatory and the astronomy department. It was decided that I should assume the directorship of the Vatican Observatory and continue as an adjunct professor at the University of Arizona.
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Observatory.

Pope John Paul I died just one month after becoming pope. So I began as director with Pope John Paul II and I retired as director just before his death in 2006. So we spent 28 years together. From the very first year of his papacy, John Paul II showed a very keen interest in advancing the scientific work of the Vatican Observatory and especially in promoting the dialogue between science and religious faith.

What were your duties or accomplishments there?

I would cite three initiatives, each of which was enthusiastically supported by Pope John Paul II: The founding in 1980 of the Vatican Observatory Research Group in Tucson, Ariz.; the establishment in 1986 of the Vatican Observatory Summer Schools for young scholars; and the construction in collaboration with the University of Arizona of the Vatican Observatory Advanced Technology Telescope at the Mount Graham International Observatory in Arizona. During my term, the observatory staff increased from five to 15 full-time employees. All staff members are also members of the Society of Jesus (Jesuits). I also initiated an adjunct scholars program which totals five part-time researchers.

How did you divide your time between the Vatican and Arizona?

I spent about 50 percent of my time at each site: January through May at Tucson and June through December at the Vatican. I taught full-time each spring semester at the University of Arizona in Tucson.

Pope John Paul II showed an interest in ... promoting the dialogue between science and religious faith.

What scientific discussions were taking place within the Roman Catholic Church during your time as observatory director?

I would cite three epoch-making activities of Pope John Paul II: the review of the Galileo affair; the meeting of the church with the world of science; and the church’s discussion of scientific evolution.

(in 1633, the church condemned Galileo for asserting that the Earth revolves around the sun. Galileo recanted his assertion to avoid being burned at the stake. In 1992, Pope John Paul II said that although the early church officials were doing their best with the knowledge they had, they were wrong, and Galileo was correct.) Please explain Pope John Paul II’s response to the Galileo affair.

John Paul II saw it as a hindrance to the dialogue of the church with the world of science. He said, "... I hope that theologians, scholars, and historians, animated by a spirit of sincere collaboration, will study the Galileo case more deeply and, in loyal recognition of wrongs from whatever side they come, will dispel the mistrust that still opposes, in many minds, the fruitful concord between science and faith, between the church and the world. I give my support to this task which will be able to honor the truth of faith and of science and open the door to future collaboration."

(Pope John Paul II asked Coyne to hold an international conference on

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"Physics, Philosophy, and Theology" at the observatory to further dialogue between scientists and theologians.) Please explain the purpose and outcome of this meeting.

A book was published containing the papers of the meeting’s participants. The pope wrote this in the preface: "... Christianity possesses the source of its justification within itself and does not expect science to constitute its primary apologetic. Science must bear witness to its own worth. While each can and should support the other as distinct dimensions of a common human culture, neither ought to assume that it forms a necessary premise for the other. The unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other."

(The church never formally condemned the theory of evolution, but Pope Pius XII in 1950 cautioned that Darwin's views could be embraced as "serious hypothesis" but not as "certain doctrine.") Please explain Pope Paul II's discussion of evolution.

In 1996, Pope John Paul II declared "new knowledge has led to the recognition that the theory of evolution is no longer a mere hypothesis." ... The pope spoke of a dualistic view of the origins of the human person, evolutionist with respect to the material dimension, creationist with respect to the spiritual dimension.

Please briefly describe the focus of your scientific expertise.

I carried out a spectrophotometric study of the lunar surface for my doctorate in astronomy. I became interested in the evolution of stars and the complexities of evolution in close binary systems (a system of two stars orbiting around their common center of mass). I have published more than 50 scientific papers on interstellar space, binary systems, variable stars and the tools astronomers use to study them. I have also researched Seyfert galaxies, a class of galaxy characterized by extremely bright nuclei.

How do you feel about intelligent design, or the theory that rejects evolution, instead saying the physical world was created by an intelligent designer?

I have been a vocal opponent of intelligent design. It is not science, although it pretends to be. I am concerned that fundamentalist religious beliefs might continue to influence the role of science in the modern decision-making process.

What are your everyday duties at Le Moyne College?

I teach general astronomy and religion and science. As the McDevitt Chair of Religious Philosophy I have initiated public lectures on "Science and Religion in Modern America." I am organizing a course for seniors to help in their transition from college as they face issues in society related to the meeting of religious faith with science.

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