



Science is where I get to spend time with the Creator

Br Guy Consolmagno SJ, Director of the Vatican Observatory

NATIONAL SCIENCE WEEK 13-21 AUGUST

The relationship between science and religion has not always been an easy one. However, in recent times, especially through *Laudato Si'* the relationship is growing in mutual respect. For example, the Pontifical Academy of Sciences in the Vatican which is a consultative body of a large number of scientists, many of whom are Nobel Laureates. In August last year, Pope Francis appointed two women to the Academy who had shared the 2020 Nobel prize for chemistry.

THE VATICAN OBSERVATORY

Jesuits have a long history in the science of Astronomy going back to the 16th century with Fr Christopher Clavius, an advisor to Galileo and a key figure in the Gregorian reform of the calendar. Br Guy Consolmagno continues that history as the current director of the Vatican Observatory.

The Vatican Observatory was set up in 1891 by Pope Leo XIII. Observatories were within the Vatican until the 1930s when light pollution in Rome began to interfere with visibility. In 2009, the Observatory was

relocated to a remodeled monastery at Castel Gandolfo, about an hour out of Rome in the Alban Hills.

Castel Gandolfo had been a papal escape from Rome's summer heat for many years. Pope Francis prefers to stay in Rome during summer. In 2014 he opened the Castel Gandolfo gardens to the public. In 2016 he inaugurated the Apostolic Palace as a museum which is now also open to the public.

The Observatory is not currently open to the public, however, summer schools for astronomy students take place at the Observatory. There are also plans to open a more comprehensive visitor's centre that may include talks by Observatory staff.



BELIEF & ASTRONOMY

Drawn from an address by Br Guy Consolmagno to the Jesuit Centre London.

I have also come to see is that belief plays a fundamental role in being able to do astronomy.

There are three religious beliefs that you have to accept on faith before you can be a scientist.

The first thing you must believe is that this universe actually exists. This may seem obvious; but if you believe, as some religions do, that 'everything is illusion,' then what is there for a scientist to study? If you were a solipsist, then being a scientist would be just wasting your time studying a figment of your imagination.

The second thing to believe is that the universe operates by regular laws. How can you go searching for the physical laws of the universe if you do not believe there are physical laws to be found? Today we have a thousand years of finding those laws and seeing how we can use them to make the telephones work; but who was the first person a thousand years ago to think that such laws exist, and that they could be discovered? Where did he or she get the faith to believe that there might be laws to be found?

If you were a pagan Roman and you saw lightning strike, you said the god of lightning threw it; if you saw crops grow, you attributed that to the goddess of crops. If you believe that everything that occurs in the universe is the result of the whims of demons and deities, there is no point in looking for scientific laws.

Christians in Roman times were accused of being atheists, because they refused to believe in these pagan gods! The God I believe in is not of the universe, but existed before the universe began; not a part of nature, but super-natural. If you believe in that kind of God, then there is room to ask how the rest of the world works, and room to wonder if it works by regular laws. We know from scripture that God is responsible for the universe, in a step-by-step manner. Genesis outlines a creation story that is fundamentally different from the Babylonian story in that rather than the physical universe being an accident, Genesis tells us that God deliberately willed it to exist.

And here is the third thing you have to believe as a scientist: you have to believe that the universe is good. We get that, again, from Genesis. If you think the universe is a morass of temptations, then you will be afraid to be too involved in it; you will want to meditate yourself to a higher level, perhaps. If you believe that, you are not going to want to be a scientist. But instead,



we believe in a God who so loved the universe that He sent God's only Son...

So why do people think that there is a conflict between science and religion? Too often the assumption is that science and religion are systems of epistemology, ways of knowing facts. Science gives me one set of facts, religion gives me another set of facts, and so surely there is going to be a time when the two systems conflict.

But that is not what science is at all, and not what religion is at all.

We all learn science in school, where it is taught as a big book of facts; and you had better use this year's book, because last year's book of facts is out of date. But that should immediately tell you that science is not just facts. Science continues even as the facts change.

What we do in science is learn

how to have a conversation about those facts... how we can talk about understanding how the universe we have observed seems to work, and how we can use that understanding to guess the next place to look. Science is not the facts, it is the conversation.

In the same way, faith is not about a bunch of things I must accept, blindly, closing my eyes to the truth. On the contrary, remember what Moses says to his people after giving the Tablets of the Law: 'do not forget the things your eyes have seen or let them fade from your heart as long as you live. Teach them to your children and to their children after them.' (Deut 4: 9) It is not, 'close your eyes' but rather, 'pay attention to what you have seen.'

ENCOUNTERING THE CREATOR GOD

But in my science I encounter not only the creator God, but also a personal God.

When I do science, God is playing a game with me. God sets the puzzles, I play out the puzzles; and like all puzzles, it is not the answers that matter, it is activity of finding the answers. The answers only count if they can then set up the next puzzle.

Science is where I get to spend time with the Creator. When God invites me to encounter him in the things that have been made, as St. Paul puts it in his letter to the Romans, God is setting up a game we get to play together. It is a game that, on top of everything else, tells me God loves me. And for that, I am grateful to be an astronomer.