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Like the Universe, Our Mission Must Evolve: Reflections of a Jesuit Scientist

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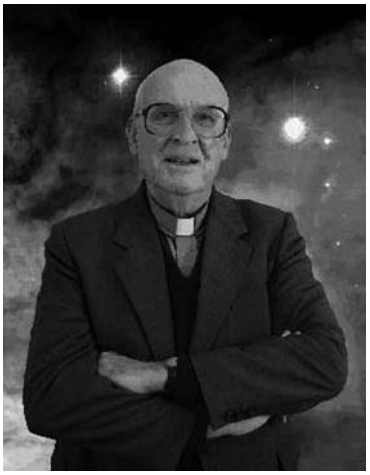
Like The Universe, Our Mission Must Evolve: Reflections of a Jesuit Scientist

In the 21st century, how can we relearn how to talk about God? Let's go back to the beginning.

By George V. Coyne, S.J.

When it comes to specifics about a dialogue between science and religion it is arguably difficult to find a more heated topic of discussion than that concerning the origins and evolution of the universe, and especially of life and of intelligence in the universe. Can these origins be understood without evoking a Creator God? Responses range from the extremes of a Stephen Hawking or a Pope Pius XII to almost all conceivable intermediate positions. Hawking claims that, if his quantum cosmological theory of the origins of the universe without boundary conditions is correct, then we have no need of God. Science excludes God. Pius XII attempted to claim that with Big Bang cosmologies scientists were coming to discover what had already been known from the Book of Genesis, namely that the universe had a beginning in God's creative action. Religious belief appropriated science.

In between we have such positions as evolutionary naturalism and episodic divine intervention. Evolutionary naturalists would claim that, although our scientific knowledge of evolution is limited, the best explanation of the universe and all that it contains is through the building of more complex molecules in an expanding, evolving system in which both deterministic and chance processes play out their roles in a universe abundant with opportunities, 13.7 billion years old and containing 10^{22} stars. Those who profess episodic divine intervention would claim that divine activity is required, at least in some phases of the evolutionary process and, in particular at the occurrence of human life and intelligence, because natural processes alone are not adequate to explain the end result. What is one who is both a religious believer and a scientist to make of all of this?



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Stars are born and stars die

But first of all we should take a look at the scientific picture of origins. Stars are born and stars die. Throughout their life cycle thermonuclear energy is the source whereby they radiate to the universe. At the beginning a star converts hydrogen to helium and later on, if it is massive enough, helium to carbon and so on to the heavier elements. At the end of its life a star can no longer sustain a thermonuclear furnace and so it can no longer resist against gravity. It collapses for a final time, explodes and expels its outer atmosphere to the universe. From this material another generation of stars is born. The birth and death of stars is very important. If it were not happening, you and I would not be here. In order to get the chemical elements to make life, we had to have three generations of stars regurgitating ever heavier elements into the universe.

So did life come about by chance or by necessity in this evolving universe? According to the best of modern science the problem is not formulated correctly. It is not just a question of chance or necessity because, first of all, it is both.

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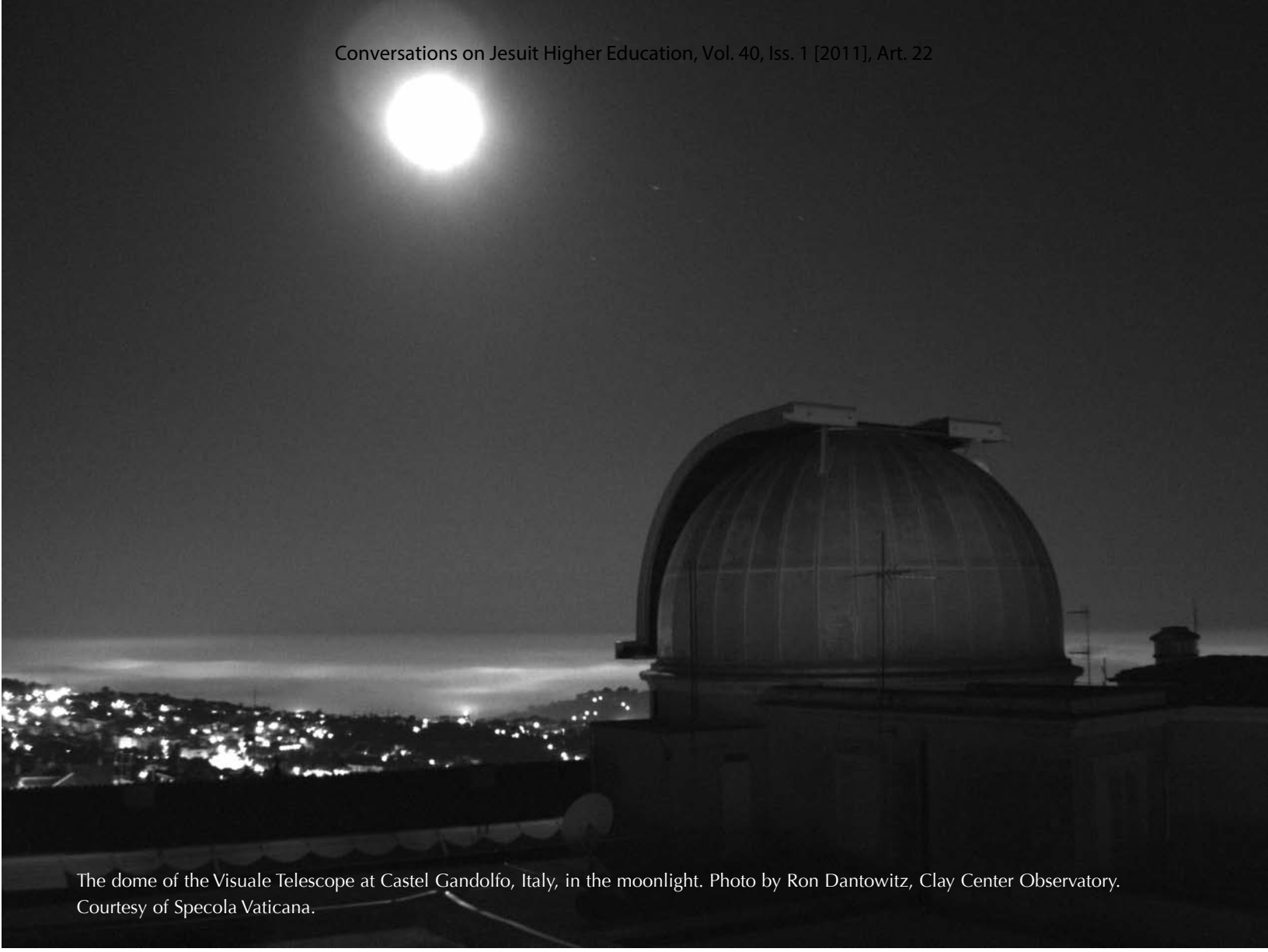


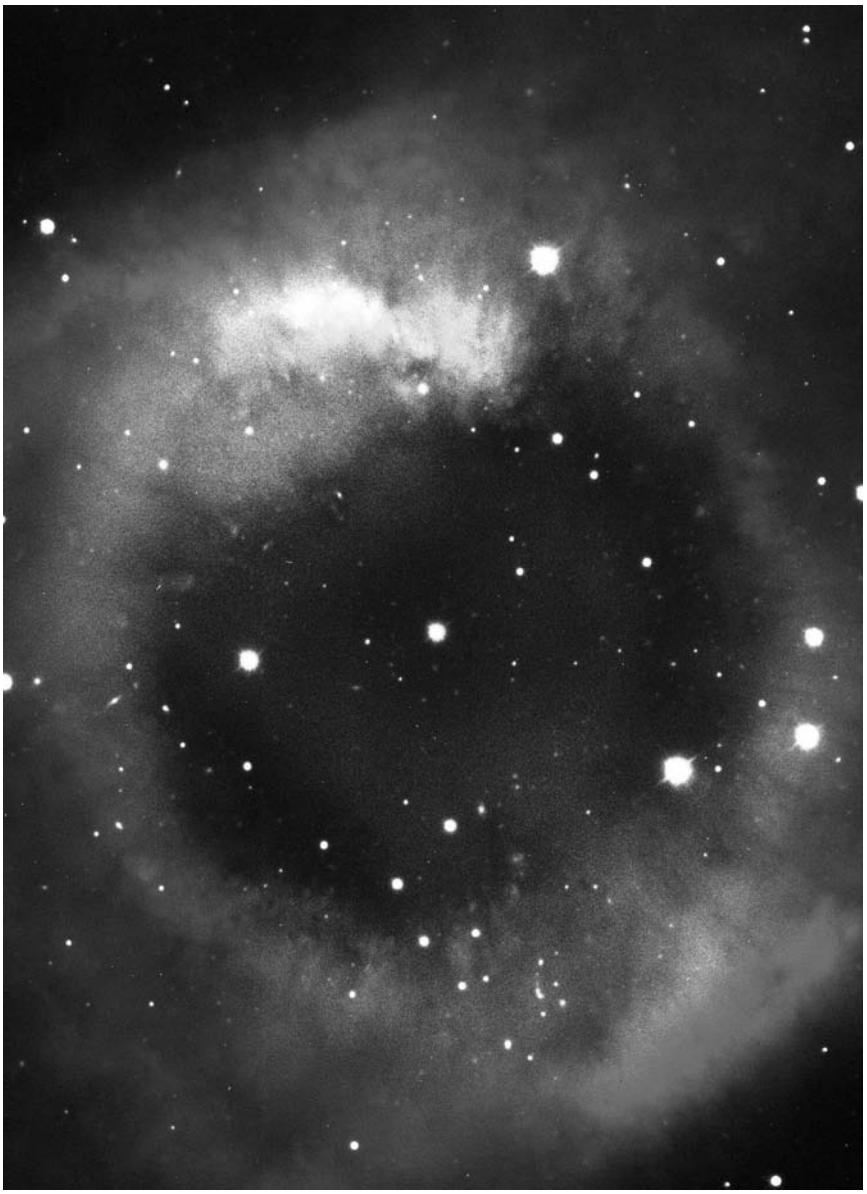
The dome of the Visuale Telescope at Castel Gandolfo, Italy, in the moonlight. Photo by Ron Dantowitz, Clay Center Observatory. Courtesy of Specola Vaticana.

Furthermore, there is a third element here that is very important. It is the fertility of the universe. What this means is that the universe is so prolific in offering the opportunity for the success of both chance and necessary processes that such a character of the universe must be included in the discussion. The universe is 13.7 billion years old and it contains about 100 billion galaxies each of which contains 100 billion stars of an immense variety. All of these stars are building up the chemistry for life through the interaction of chance and necessary processes. A good example of a chance event would be two very simple molecules wandering about in the universe. They happen to meet one another and, when they do, they must make a more complex molecule because that is the nature of these molecules. But the temperature and pressure conditions are such that the chemical bonding to make a more complex molecule cannot happen at this time and place. So they wander off, but they or identical molecules meet trillions of times in this universe, and finally they meet and the temperature and pressure conditions are correct. As this process goes on and more complex molecules develop through the interaction of chance and necessity in a fertile universe.

The Great God of the Gaps

How are we to interpret the scientific picture of life's origins in terms of religious belief? The religious believer is tempted to have immediate recourse to God as an explanation. He is brought in as the Great God of the Gaps. In this context it is unfortunate that, at least in America, creationism has come to mean some fundamentalist, literal, scientific interpretation of Genesis. Judaic-Christian faith is radically creationist, but in a totally different sense. It is rooted in a belief that everything depends upon God, or better, all is a gift from God. The universe is not God and it cannot exist independently of God. Neither pantheism nor naturalism is true. But note that this is a faith-based conclusion. But if we confront what we know of origins scientifically with religious faith in God the Creator, what results?

I would claim that the detailed scientific understanding of origins has no bearing whatsoever on whether God exists or not. It has a great deal to do with my knowledge of God, should I happen to believe he exists and that he created the universe.



The Helix Nebula, NGC 7239, in Aquarius, which is 700 light years from us. Imaged at the Vatican Advanced Technology Telescope on Mt. Graham, Arizona. Courtesy of Specola Vaticana.

In fact, reflections of a religious believer upon our scientific knowledge of a universe in evolution reveal a God who made a universe which shares in his own creativity. Such a view of creation can be found in early Christian writings, especially in those of St. Augustine in his comments on Genesis. Perhaps God should be seen more as a parent or as one who speaks encouraging and sustaining words. Scripture is very rich in these thoughts. It presents, indeed anthropomorphically, a God who gets angry, who disciplines, a God who nurtures the universe. God is working with the universe. The universe has a certain vitality of its own like a child does. It has the ability to respond to words of endearment and encouragement. Words which give life are richer than mere commands or information. In this way does God deal with the universe.

Only by analogy

These are very weak images, but how else do we talk about God? We can come to know God only by analogy. The universe as we know it today through science is one way to derive analogical knowledge of God. For those who believe that modern science does say something to us about God, it provides a challenge, an enriching challenge, to traditional beliefs about God. God in his infinite freedom continuously creates a world which reflects that freedom at all levels of the evolutionary process to greater and greater complexity. God lets the world be what it will be in its continuous evolution. He does not intervene, but rather sustains, allows, participates, loves.

This view of the evolutionary universe and of our place in it, as the sciences see it, and of God's role in the universe, derived from the reflections of a religious believer upon that same science, may help us in a further understanding of Jesuit mission. We, in a special way, share in the creativity which God desired the universe to have. We are co-creators in God's continuous creation of the universe. The Jesuit identity expressed by St. Ignatius' vision of Jesuits as contemplatives in action is reinforced by our reflections on the nature of the universe. Co-creators in the universe can only realize their mission if they are constantly united to God, the source of all creativity. Jesuit identity is much more than what Jesuits and their partners do. It is bound intimately to the very nature of the universe which drives us as co-creators to the serve others in union with the Creator.

Ignatian mission is a participation in the intrinsically missionary nature of the Church, the concrete presence of the Creator among his co-creators. God is continually encountering the world in new and creative ways because the world he created is responsive to his continual encounter. Ignatius sent his men into that world and sought to free them of any encumbrance to a free and total commitment to the world in whatever way their talents would best serve the Church. And their mission was to evolve just as the universe itself is in evolution. But for any individual Jesuit, Jesuit partner or Jesuit institution the evolution of mission must be in consort with the intrinsically missionary Church. The wisdom of God in emptying himself to create a world which shares in his creativity requires that, since God is the one God of all creation, this participation in his creativity must be universal. It cannot favor any particular social, cultural, religious movement. While to function any given mission must be limited, it cannot be exclusive. ■