

# Beauty from the Bottom of the Universe

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## An astrophysicist seeking the universe's oldest light speaks on faith and science

by Elizabeth Hansen

Ancient radiation, the birth of the universe and the future of the galaxies around us: for Marco Bersanelli, a professor of astrophysics at the University of Milan, such mysteries are all in a day's work.

For the past 17 years Bersanelli has been a member of the science team of Europe's recently launched Planck observatory, a telescope currently orbiting the sun 1.5 million kilometers from Earth in a mission to map traces of radiation left

over from the Big Bang 14 billion years ago. Essentially, Planck is grabbing images of the universe's earliest light and, hopefully, clues as to how the universe will continue to evolve in the future.

To a culture in which popular science is often fueled by the likes of Richard Dawkins, Britain's celebrated atheist-scientist, Bersanelli offers a calm explanation of the relationship between his line of work and deeply rooted Catholic faith.



"To me, it is in the wonder and the beauty and the connectedness of the whole creation ... that I see a sign of the Creator," Bersanelli said in an interview with Headline Bistro last week, prior to giving a presentation at Columbia University with 2008 Templeton Prize winner Father Michael Heller.



To follow the evolutionary process of the universe, seeing it "opening up like a flower" and finding mankind "rooted in the cosmic history for 14 billion years" – "it's a beautiful and very moving thing," said Bersanelli, who co-authored the recently released book "From Galileo to Gell-Mann: The Wonder that Inspired the Greatest Scientists of All."

But Bersanelli says he's not looking for proofs for God in the Planck observatory's map of the cosmic microwave background – rather, he views science as providing "more

signs that indicate the ultimate origin."

While the body of his research is directly based on the radiation leftover from the Big Bang, Bersanelli stresses a distinction between it and the ongoing process of creation sustained by God.

"The Big Bang is not creation," Bersanelli said, adding that creation "is much deeper than that. (It) is dependence of every creature in the entire universe on God, on the mystery that makes everything. Every instance is created."

As for how the Church should approach evolution, Bersanelli thinks it's doing well, being open to science with warning of the degeneration of science into ideology.

As Bersanelli speaks, a theme becomes evident: his science and overall approach to life is framed as a pursuit of truth – as he puts it, an honest and distinct "way of looking at reality."

Take evolution – as a Catholic, he doesn't see a problem with evolution "as a search for the process that makes the universe flourish."

Likewise, he would encourage students interested in a scientific career to not be afraid of the perceived divide between faith and science.

"Follow with courage what is true, what is beautiful, because beauty is the face of truth," Bersanelli said. "I think that's a call you should not disregard if you're gifted for that. That is where your testimony will be asked, precisely in showing there is no truth that can be opposed to a bigger truth."



One can see the influence of the international Catholic lay movement Communion and Liberation, a movement founded in the '50s in Milan by theologian Msgr. Luigi Giussani and which Bersanelli says has completely "penetrated" his approach to his work.

Bersanelli encountered the movement – which takes its name from the concept of Christianity, lived in the communion of the Church, as the foundation for mankind's true freedom – in high school in Milan, when he met a group of students involved in its meetings.

"I wanted to share that intensity that I could see somehow, and I didn't know what was behind that," he said. Later he developed a friendship with Msgr. Giussani himself.

In his seminal work "The Religious Sense," Msgr. Giussani wrote that "a trivial relationship with reality, whose most symptomatic aspect is preconception, blocks the authentic religious dimension, the true religious fact."

Musing on how he and Richard Dawkins could come to completely different conclusions about God, Bersanelli suggests that science is not the only realm that invites misconceptions.

"I could say there are very different perceptions of what it is to have a baby or to marry ... or what is worthwhile in life," Bersanelli said. "We all face the same thing and have different approaches. Science is no exception."

Any of those big questions – love, the existence of God – serve as a challenge for us to exercise our freedom and judgment, testing to see "how we stand in front of reality – with a positive openness, or with a prejudice or narrow preconception," Bersanelli said.

Dawkins aside, Bersanelli said most scientists he knows, regardless of their religiosity, are usually sensitive and not curious about his faith. After all, he said, "it is probably a trait of the scientist to be open to the unknown for we do research facing the unknown every day."

And as a Catholic scientist, Bersanelli said he's discovered "increasing satisfaction for whatever piece of truth I can find or struggle for."

"Everything is a sign," he emphasized, "a sign of the ultimate happiness for what we are made."

He got a flood of that satisfaction last month, when the Planck observatory sent back its first mapped image of the cosmic microwave background.

After 17 years of development, to see that Planck's instruments were functioning in outer space "and, finally to see the signal from the bottom of the universe we were starting to get – well, that has been a very exciting time," Bersanelli said.