



The Holy See

**ADDRESS OF POPE JOHN PAUL II
TO THE PARTICIPANTS
IN THE VATICAN CONFERENCE ON COSMOLOGY**

Saturday, 6 July 1985

Dear Friends,

1. Offer very cordial greetings to the participants in *the Vatican Conference on Cosmology*. In this year which marks the Fiftieth Anniversary of scientific research at the Specola Vaticana, I would like to take this occasion to extend my heartfelt congratulations and best wishes to Father Coyne and the entire staff of the Observatory. Please know that your diligent work, especially in the field of astrophysics, together with your ecclesial dedication, bears splendid witness to the Church's profound interest in the world of science and particularly in the men and women engaged in scientific research.

I warmly greet *the observational astronomers and the theorists in gravitational physics and cosmology* who have accepted the invitation to take part in this important meeting. It is a joy to welcome you today, together with the members of your families.

2. Through the natural sciences, and cosmology in particular, we have become much more aware of *our true physical position within the universe*, within physical reality - in space and in time. We are struck very forcibly by our smallness and apparent insignificance, and even more by our vulnerability in such a vast and seemingly hostile environment. Yet this universe of ours, this galaxy in which our sun is situated and this planet on which we live, is our home. And all of it in some way or other serves to support us, nourish us, fascinate us, inspire us, taking us out of ourselves and forcing us to look far beyond the limits of our unaided vision. What we discover through our study of nature and of the universe in all its immensity and rich variety serves on the one hand to emphasize our fragile condition and our littleness, and on the other hand to manifest clearly our greatness and superiority in the midst of all creation - the profoundly exalted position

we enjoy in being able to search, to imagine and to discover so much. *We are made in the image and likeness of God*. Thus, we are capable of knowing and understanding more and more about the universe and all that it contains. We can reach out and grasp its inner workings and designs, plumbing its depths with questioning reverence and with awestruck imagination.

3. This Conference, I have been told, has as one of its principal focuses the determination of *the inherent limitations of cosmology's* competency and its observational verifiability - the limits in principle and in practice of the scientific verification of its theoretical products. With a gradual and constant growth in humble self-knowledge, we are able to avoid the extremes of an inflated evaluation of our own abilities and capacities or a disparagingly narrow and superficial one. And that is true of any discipline or field of study. A sound appreciation of both our limitations and strong points enables us to plan our projects carefully, to maintain proper relationships with the material, personal and divine realities, and to become ever more sensitive to all the valuable information which is available to us through modern science.

4. The more we know about physical reality, about the history and structure of the universe, about the fundamental make-up of matter and the processes and patterns which at the roots of the material world, the more we can appreciate the immensity of *the mystery of God*, the more we are in a position to grasp *the mystery of ourselves* - our origin and our destiny. For creation, as we have come to know it, speaks to us in fragmentary yet very true reflections of the God who created it and maintains it in existence. Of course, that picture must always remain tantalizingly incomplete. For certain aspects of our lives rise above and move beyond the material dimension and, while having deep roots in the material, surpass the understanding which the natural sciences are capable of providing. They draw our attention to the realm of the Spirit. The human creations of art and poetry, our longing for justice and peace and for wholeness, indeed all genuine human experience, lead us to recognize that there is *an interiority in the universe and particularly in human life*, an interiority which cannot simply be reduced to the features of reality which the physical and natural sciences are concerned with. There are certainly important and essential contributions to be made by the sciences, directly and indirectly, to these more interior or spiritual characteristics of reality. Indeed such contributions must be made, but their investigation and study demands *other complementary methods and disciplines* such as those provided by the arts, the humanities, philosophy and theology. These in turn must become aware of their own essential competencies and limitations.

5. Much of what modern astronomy and cosmology investigate does not find direct application via technology. Yet it makes a vitally important contribution. For it helps us, at the very least, *to put ourselves and everything else into a larger perspective*, encouraging us to move beyond our own narrow and selfish concerns. Our view of ourselves, of God and of the universe is radically different from that of people in the Middle Ages. We see ourselves situated in a much larger context - in a much more vast and much more intricately, even delicately, complex world and universe.

For the first time we have seen ourselves from outside - from the Moon, and from other vantage points in our solar system. And with that startling perspective, we realize that we must be *more responsible for ourselves, our neighbours, our institutions, and our planet*, whatever may be our nation, religion or political stance. We realize ever more deeply our smallness and our frailty, but at the same time our grandeur. We feel more inclined to say together with the Psalmist of the Old Testament: "The heavens proclaim the glory of God and the firmament shows forth the work of his hands" (*Ps. 19 (18), 1*).

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