



Giuseppe Colombo



Padua, Italy, 2 Oct. 1920 - 21 Feb. 1984

Title Professor of Mechanics, University of Padua, Italy

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Commemoration – Most of you do remember Giuseppe Colombo. He joined the Academy in '78 and he left us and this world two years ago at the age of 63. He had the privilege to participate in two of our general meetings, and in one of them we listened to his lecture on mathematical science. As a matter of fact he began his scientific activity in mathematics, but he is probably best known for his contribution to celestial mechanics and to space science and technology. I remember the interpretation of the period of rotation of the planet Mercury. Mercury performs one and a half rotations, per revolution.

The talent of Colombo combined, in a unique way of thinking about nature, the mentality of a mathematician, that of a physicist, that of an engineer. Sometimes they were using their proper context, as in the investigation of the stability properties of general dynamic systems, or in the study of the characteristics and rules of the motion of celestial bodies, or finally in the conception of human artefacts to be sent into space.

At other times, they were joined together in a systemic approach for defining, for example, a complete logistic organization in space for its utilization by man, with permanent stations on planets and satellites, free-flying large and ultra lightweight structures for service to the earth and, in addition, appropriate shuttle for interorbital traffic.

But his central interest was always the natural phenomena: first to understand their real physical meaning, then to give a correct theoretical interpretation and finally to envisage extension and practical applications. One example, he has always been interested in the physics of a standard distribution of mass in the solar system, like the Saturn rings. Freely orbiting particles have in principle no structures, and if structures are present they must be either a consequence of a peculiar process of information which has survived, or they must be maintained by a body, like satellites discovered, known or undiscovered. But what happens if the particles are not free but bound in some way, while the centre of mass is still freely orbiting? The gravity gradient shows up giving a new type of stability. If matter is extended enough in terms of a unique coherent motion, you can apply this concept to stabilize a large continuous structure in space.

This specific idea, very dear to Colombo in his last years of life, is now developed in a joint programme by NASA and Italy. Colombo has been not only a scientist but also a teacher for a wide audience in Europe and America. His preferred tool was not the lecture but the discussion. A discussion with him was an intellectual game with no rules, no constraints, no limit of subject, where intuition and fantasy played a fundamental role but with an unrelenting scientific control of concept.

What I'm trying to say is that with Colombo we lost not only a real scientist but also a source of inspiration and of intellectual excitement. He was a man of extraordinary human qualities, generous with ideas, friendly in human relations, strong in pursuing the truth. He was a believer in God and I'm sure that this interior attitude gave him the strength necessary to accept the end of his life, an end of which he was perfectly conscious a long time in advance.

Giampietro Puppi