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The Works and Days of Gabriel Barceló

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Abstract

This paper is a commentary to the book: *New Paradigm in Physics—Theory of Dynamic Interactions,* published by Gabriel Barceló. The paper describes the origins of the Theory of Dynamic Interactions, his contents and certain circumstances of it. He remembers certain conclusions of the researcher. For example, howa free, unrestrained body in space, can initiate an orbit that has no need for the existence of a central force.

Keywords

Dynamic Interactions, Miguel Catalán, Flight of the Boomerang, Rotating World, Imago Universi, Paradigm in Physics, Cosmos

The contents of the theory of dynamics interactions hark back to the 1950s.

In 1956, the lecturer and scientist, Miguel Catalán[1] shared some of his knowledge of rotational motion with his students. With a view to making his drawings easier to understand for his followers he showed them how a gyroscope behaves and its reactions.

It was during those classes that a student felt the call of his teacher. Indeed, the scientific inquisitiveness of the student in question stretched beyond the bounds of the classroom and accompanied himfor many years after. The student on constant alert was Gabriel Barceló who, treading the fascinating path of one of the toughest areas in physics has continued to date to try and penetrate into the "orbit of the basic atoms". That is to say, to delve into the teachings of his inimitable master.

Barceló tackles the world of rotation on noting that orthodox physics does not adequately cater for its structure. Accordingly, he comes up with a groundbreaking approach capable of opening a door to advance scientific and techno-

[1]Miguel A. Catalán (1894-1957): He was one of the great 20th century spectroscopists. His name was given to an impact crater on the moon that is found at its southwestern tip to remember him.

logical progress. His purpose, since then, has been to follow a road that may lead to the interest of other minds. It was and still is a new field of study.

What this physicist claims is that, in his opinion, it is rather dubious to predict the location of a solid body subject to several rotations. A fact that leads us to certain shortcomings in vector algebra.

The first circumstance serves to remind us that, in classical mechanics, if a net force is not applied to the center of a solid, its path remains unchanged and no other change comes about.

In this difficult, albeit exciting work, the physicist and doctor of industrial engineering, Gabriel Barceló, leads us along a path capable of opening unknown doors. The researcher points to how a free, unrestrained body in space can initiate an orbit that has no need for the existence of a central force.

On the other hand, this same path leads us to an important idea: the concept of inertia. From then on we discover there are two types of inertia, a tangential one, which is equivalent to the mass and a rotational one, which is separate from the former and which is capable of leading us to important discoveries in physics.

Once these doors have been opened, a brake is put on our wish to forge ahead. The mathematical know-how required lies within the reach of all but a well-prepared, learned few. Only they are capable of carrying on, making this an excellent juncture to have a look at the dates and highpoints of the intellectual journey of Barceló and his biography. Back in 2006 he published a book of laudable scientific quality: "The Flight of the Boomerang" [1], continuing on his way in 2008 with an extraordinary work entitled "A Rotating World" [2]. Despite the prodigious work involved in these titles his investigations suffered no neglect and are ongoing. Not to mention conferences, congresses and other press tasks that continuously require his attention. Moreover, his books continue to see the light of day. The two-volume "Imago Universi: A History of the Human Conception of the Cosmos" [3], published in 2013 affords a marvelous insight into our world and its secrets.

True to his eagerness to throw light on his variouspursuits, there is another book that is to honor the life and work of the man who guided him on his first tentative steps in the thrilling world of physics. Published in 2010, it stands as a moving homage to his teacher.

The author offers his biography in a work entitled "Miguel Catalán. Living memory" [4]. Accordingly, the generous pupil remembers his master. The neglect that prevails in certain sectors as regards the work of Catalán receives a wake-up call with this serene and unforgettable homage to a wise man who, in spite of the unprecedented silence to which his achievements are subject, other international physicists saw to it that a crater on the moon would bear his name.

To close these few words we now turn to the latest publication of a work of Gabriel Barceló; an exciting work originally written by him in English to be later meticulously translated by the author into Spanish. I refer of course to "A New

Paradigm in Physics" [5]. A work that is destined to make an international impact and one that merits in-depth reading and extensive dissemination.

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