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Title: Obituary - Chalonge, Daniel

Authors: Pecker, J. C.

Journal: ROYAL ASTRON. SOC. QUARTERLY JOURNAL V. 21, P. 481, 1980

Bibliographic Code: 1980QJRAS..21..481P

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Q. Jl R. astr. Soc. (1980) **21**, 481-488

Obituaries

DANIEL CHALONGE

The name of Daniel Chalonge will remain, for all those who were acquainted with him, for his pupils and for his friends in many countries, that of an exemplary man, and an astrophysicist of a very high class. He was a firm enemy of honours; not only did he never request any, but he even quite often refused to accept them.

His career was as direct as was the man. Born on 1895 January 21, he entered the École Normale Supérieure, in Paris, and started his scientific activities under Charles Fabry, who considered him as one of his favourite students. After some work in the field of organic chemistry, his interests shifted towards what we now call laboratory astrophysics, namely the study of hydrogen. The peculiar properties of this element (a basic constituent of organic molecules, but also the most important element in the Universe) led him to conceive and to build his hydrogen tube, which soon became a photometric standard of exceptionally high performance. A master in the understanding of the physics of the emission of such devices, he turned quite naturally to astrophysics, a field in which the hydrogen tube can be used as a calibration tool. From 1934 until the onset of the Second World War, he established and continuously refined, in a close co-operation with Daniel Barbier, his system of stellar classification, often named, nowadays, after the names of the members of the team who created and developed its vast potentialities (the BCD classification, which stands for Barbier, Chalonge, Divan). The systematic use of spectral criteria characteristic of the hydrogen continuum allowed a precise measurement scheme, which was much more satisfactory than the usual labelling of spectral types and luminosity classes. It also appeared natural and easy to calibrate the two-dimensional Chalonge classification in terms of effective temperatures and gravities, as the BCD criteria can be computed easily from stellar model atmospheres. In later stages of development of the work, the introduction of a third parameter, linked to the chemical composition, has further increased the value of the system.

It is impossible, even briefly, to summarize the many researches pursued by Chalonge and his group, since the Second World War. One can mention

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His career was as direct as was the man. Born on 1895 January 21, he entered the École Normale Supérieure, in Paris, and started his scientific activities under Charles Fabry, who considered him as one of his favourite students. After some work in the field of organic chemistry, his interests shifted towards what we now call laboratory astrophysics, namely the study of hydrogen. The peculiar properties of this element (a basic constituent of organic molecules, but also the most important element in the Universe) led him to conceive and to build his hydrogen tube, which soon became a photometric standard of exceptionally high performance. A master in the understanding of the physics of the emission of such devices, he turned quite naturally to astrophysics, a field in which the hydrogen tube can be used as a calibration tool. From 1934 until the onset of the Second World War, he established and continuously refined, in a close co-operation with Daniel Barbier, his system of stellar classification, often named, nowadays, after the names of the members of the team who created and developed its vast potentialities (the BCD classification, which stands for Barbier, Chalonge, Divan). The systematic use of spectral criteria characteristic of the hydrogen continuum allowed a precise measurement scheme, which was much more satisfactory than the usual labelling of spectral types and luminosity classes. It also appeared natural and easy to calibrate the two-dimensional Chalonge classification in terms of effective temperatures and gravities, as the BCD criteria can be computed easily from stellar model atmospheres. In later stages of development of the work, the introduction of a third parameter, linked to the chemical composition, has further increased the value of the system.

It is impossible, even briefly, to summarize the many researches pursued by Chalonge and his group, since the Second World War. One can mention, as typical examples, the very detailed studies of absorption lines, the determination of the relative populations of ionization stages as in the Magalhães Clouds, the precise measurement of the ionization potential, the study of self-absorption, of radiative fluxes, of ionization stages, ... of problems with the very sophisticated spectrographs built under his guidance at the Institut d'Astrophysique.

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Obituaries

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One should also quote Chalonge's contribution to the knowledge of the general astrophysics, and to continue the studies of the main elements of the universe.

His name represents the scientific spirit of a distinguished scientific activity: the laboratory of Charles Fabry at the École Normale Supérieure. It is a name that lives on in the Institute of Astrophysics, which, together with Henri Moitte and Daniel Barbier, he was the initiator, and it is in the laboratory of the Institut d'Astrophysique that he conducted his work, with assistance of a succession of students: de Thévenin, de Paris, and every day the other students who were his laboratory in the last years of his life.

His name is the name of a man who was a pioneer in the field of laboratory astrophysics, and who was also a pioneer in the field of astrophysics. His achievements, and the results of his work, and the scientific and technological progress he made, will be remembered by the scientific community. His name is the name of a man who was a pioneer in the field of laboratory astrophysics, and who was also a pioneer in the field of astrophysics. His achievements, and the results of his work, and the scientific and technological progress he made, will be remembered by the scientific community.

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