

Paul Ledoux (1914–1988)

Paul Ledoux passed away on October 6, aged 74. President of ESO's Observing Programmes Committee from 1972 till 1975, he had with his fellow members the difficult task of selecting among observation proposals. He was also member of the ESO Council for which he served as President from 1981 till 1985.

His wisdom as well as a deep kindness, essential qualities for such an important leadership, helped him to gain respect and friendship among his colleagues in the ESO Council. Paul Ledoux, a student of P. Swings, graduated in Physics in 1937 at the Liège University. He soon went to Oslo to work with A. S. Rosseland where he became interested in the structure and stability of stars. This led him in 1941 to establish the existence of a maximum mass value for stable main sequence stars in a famous *Astrophysical Journal* paper entitled "On the Vibrational Stability of Gaseous Stars".

The Second World War had already started and Paul Ledoux actively participated in the defense of the allied countries, serving as a member of the meteorological service of the Royal Air Force. Just after the war, he returned to stability problems, studying the effect of a variation of the adiabatic exponent on the onset of a dynamical instability. Dealing with white dwarfs,



he also showed that no hydrogen can be present in the central layers of a white dwarf while only a very limited amount can be acceptable in the external layers.

In 1947, Paul Ledoux published an analysis of the effect of a discontinuity in mean molecular weight on stellar structure. He showed that this situation leads to a partial mixing called semi-convection. Convection itself was one of his favourite subjects but he also devoted himself to the problem of the helium content in the Galaxy, proposing a source of helium enrichment through homogeneous evolution of massive stars, as a result of rotation.

Non radial oscillations did receive a great deal of his attention. He associated the presence of unstable g modes to the existence of a superadiabatic gradient and presented those results in his "thèse d'agrégation" in 1949.

Among the most famous papers published in the past decades on Stellar Stability, everyone will remember two 1958 reviews contained in the *Handbuch der Physik*, signed by Paul Ledoux, the first one in cooperation with Th. Walraven.

Celebrated in Belgium as well as in foreign countries, he was honoured by the "Prix Francqui" in 1964, the "Prix décennal des Mathématiques appliquées" in 1968, the "Eddington Medal" of the Royal Astronomical Society in 1972 and the "Médaille J. Jansen" of the Academy of Sciences of Paris in 1976, to cite but these few.

He became Professor at the University of Liège in 1959 and since then, performed enormous teaching charges covering Astronomy, Astrophysics, Analytical Mechanics, Celestial Mechanics, Meteorology and Hydrodynamics. He was very devoted to his students and all of them discovered in him not only a talented scientist but also a warm although deeply earnest man. His death will be felt as a great loss by all his colleagues, collaborators and friends in the whole astronomical community.

A. NOELS

List of ESO Preprints

September–November 1988

608. J. Surdej, P. Magain, J.P. Swings, M. Remy, U. Borgeest, R. Kayser, S. Refsdal, H. Kühr: Preliminary Results from a Search for Gravitational Lensing within a Sample of Highly Luminous Quasars. Communication given at the first DAEC Workshop in Paris.
609. F. Murtagh: Hierarchical Trees in N-Body Simulations: Relations with Cluster Analysis Methods. Computer Physics Communications.
610. H.E. Schwarz, S. van Amerongen, M.H.M. Heemskerk, J. van paradijs: Outbursts in TV Columbae: Walraven Photometry and CCD Spectroscopy. *AA Letters*.
611. A. Terzan, Ch. Ounnas: A Photometric Study of the Bright Cloud B in Sagittarius. VI. 1592 New Variable Stars and 30 Diffuse Objects. *AA Suppl.*
612. R. Arsenault: The Preponderance of Bar and Ring Features in Star-Burst Galaxies. *AA*.
613. E. Oliva, A.F.M. Moorwood, I.J. Danziger: Infrared Spectroscopy of Supernova Remnants. *AA*.
614. Z.I. Tsvetanov, I.M. Yancoulova: Reddening in the Narrow-Line Region of Active Galactic Nuclei. *M.N.R.A.S.*
615. A.F.M. Moorwood, E. Oliva: Infrared [FeII] and H_2 Line Emission in Active Galactic Nuclei. To appear in Proceedings of IAU Symposium 134, *Active Galactic Nuclei* (eds. D.E. Osterbrock and J.S. Miller, Kluwer Academic Publishers).
616. E. Brocato, R. Buonanno, V. Castellani, A.R. Walker: CCD Photometry of the LMC Cluster NGC 1866: Observational Results. *Astrophysical Journal*.
617. G.A. Tammann: The Distance of the Virgo Cluster – a Review.
618. J. Andersen, J.V. Clausen, P. Magain: Absolute Dimension of Eclipsing Binaries. XIV: UX Mensae. *AA*.
619. R. Gathier, S.R. Pottasch: Properties of Planetary Nebulae. II. Central Star Evolution. *AA*.
620. G. Srinivasan: Millisecond Pulsars: a New Population of Gamma Ray Sources? Invited talk presented at the Symposium on Advances and Perspectives in X-ray and Gamma-ray Astronomy held in Espoo, Finland, 18–21 July 1988, as part of the COSPAR General Assembly.
621. A. Cavaliere, E. Giallongo, F. Vagnetti: Uncertainties and Apparent Trends in the Evolution of Quasars. *The Astronomical Journal*.
622. S. D'Odorico, S. di Serego Alighieri, M. Pettini, P. Magain, P.E. Nissen, N. Panagia: A Study of the Interstellar Medium in Line to NGC 5128 from High Resolution Observations of the Supernova 1986G. *AA*.
623. G. Meylan: Studies of Dynamical Properties of Globular Clusters. V. Implications of the Observed Flat MS Mass Function in 47 Tucanae. *AA*.
624. R.M. West: Halley's Comet (Part I): Ground-Based Observations. V.I. Moroz: Halley's Comet (Part II): Space Studies. Invited Discourses at the XXth IAU General Assembly. To be published in IAU Highlights, Vol. 8 (1989).

ERRATUM

In the article "Active Optics: The NTT and the Future" (*The Messenger* No. 53, September 1988, p. 1), there was an error in the text of Fig. 7 (p. 6). The text given for Fig. 7 (ii) should refer to Fig. 7 (iii); conversely, the text given for Fig. 7 (iii) should refer to Fig. 7 (ii).