

# Jean-Marie Mariotti (1955–1998)

Jean-Marie Mariotti, head of the VLTI programme at ESO since the fall of 1997, passed away at the age of 43 on July 28 in Munich, taken by a sudden and acute leukaemia. Together with his wife, Françoise, and their children, Apolline and Octave (6 and 3 years old), a brief ceremony was held on July 31 at the Ost-Friedhof in Munich, attended by his family and a number of his ESO friends and colleagues.

Jean-Marie was born in 1955 near Paris, from a family having Corsican and Italian origins. He first graduated in 1978 as an optical engineer from the Ecole Supérieure d'Optique at Orsay, the famous school that has given to optics and astronomy so many renowned characters. He then chose to move to astronomy and undertook graduate studies at the Université Paris VII. Thereafter he elected to sail on the risky and uncertain waters of high angular resolution at optical wavelengths, at a time when scepticism was dominant among many more classical astronomers. From his double training, Jean-Marie was to retain forever a constant preoccupation for clever experimental solutions and immediate applications to sound astrophysical problems.

Under the supervision of François Sibille, he defended a Doctorate de 3e cycle in 1981, on speckle interferometry in the infrared with observations collected at Zelentchuk and Kitt Peak, then after a short stay in Milan with P. di Benedetto, he joined the Observatoire de Lyon, which was at that time headed by Guy Monnet. With Christian Perrier just returning there from ESO, they built a long lasting collaboration and friendship which soon included Steve Ridgway. The Thèse d'Etat of Jean-Marie, presented in 1987 at the Université Claude-Bernard, sets out many results supporting the interferometry programmes of today, some of them obtained with the Plateau de Calern interferometer, the pioneering one at that time. He returned to the Observatoire de Paris in 1988 as an astronomer and his expertise, together with a firm but gentle temper, was soon internationally recognised: he chaired the ESO Interferometry Panel from 1990 to 1992, a key period for the detailed conception of the VLTI and its instrumentation; he became a member of the ESA Infrared Interferometry Cornerstone Advisory Group and of the NASA Planet Finder Science Advisory Group, two places where he played a key role in the emergence of the DARWIN mission. At the Observatoire de Paris, Jean-Marie supervised a number of students, among them Vincent Coudé du Foresto, Zhao Peiqian, Guy Perrin, Frederic Cassaing (ONERA), then, more recently, Bertrand Menesson, Cyril Ruillier and Pierre Kervella who will greatly miss him in the completion of their PhDs.

His exquisite understanding of coherent optics led to several basic interferometry articles: in 1984, with di Benedetto, he published a thorough analysis of pathlength stability in interferometers, from data obtained at the Plateau de Calern interferometer; in 1988, with Ridgway, he invented the Double Fourier spectral-spatial analysis which elegantly extends to a spatial interferometer the classical Fourier spectroscopy. Both of these, along with Fizeau's, Labeyrie's and Shao's papers, are included in the elite collection of Selected Pa-

pers on Long Baseline Stellar Interferometry, published by Lawson in 1997.

In fact, a third article in this selection, although not signed by the ever modest Mariotti, was in 1991 a capital contribution which he inspired and made effective: it develops the concept of spatial filtering, with optical fibres, of the optical beams affected by atmospheric turbulence. Applied by Coudé du Foresto and Perrin since 1992, this leads to a gain of an order of magnitude in accuracy of interferometric visibilities, reaching nowadays  $10^{-3}$  or better. The impact on stellar physics has been immediate, leading to unprecedented accuracy on effective temperature of stars. All interferometers planned today, including VLTI and Keck, will use this concept. Elaborating on the expected or demonstrated performances of optical fibres, he proposed in 1996 a futuristic view where the large telescopes present on the Mauna Kea site could be coherently coupled with the same convenience as radio astronomers carry coherent signals on kilometric distances.

His contribution to astronomy began in 1983 with careful speckle observations of circumstellar envelopes, including objects such as GL2591 IRC+10216 or MWC 349. The mastery he and Perrier had attained in speckle interferometry and understanding of the capricious atmospheric turbulence led them to publish in 1987 a paper which had to question the reality of the "first" brown dwarf, VB8 B, proposed to be a companion to the star VB8. Indeed this rather negative task was unpleasant, but later independent observations supported the conclusion. It was the beginning of Jean-Marie's interest for low-mass objects, such as brown dwarfs. This would lead him, in collaboration with the late Duquenois in Geneva, to systematic surveys in both hemispheres, utilising adaptive optics and still waiting for completion.

The issue of exo-planets and possible life was associated in Jean-Marie's mind, as it is among many astronomers, with fundamental questions on the place of Earth and man in the Universe. This philosophical rooting, where he felt some ethical obligation for his profession, certainly played a role in his ever deeper involvement in the subject: he was at the origin of the Darwin interferometer proposal to ESA, he refocused the VLTI on the detection of exo-planets and, finally, he discovered jointly with Mayor, Perrier and others, a jovian-type planet at 2.5 a.u. from the star 14 Her, only a few weeks before his passing away.

Jean-Marie was highly conscious of the need to train a new breed of astronomers, especially in Europe, in these revolutionary perspectives of optical interferometry and the search for exo-planets: together with Danielle Alloin, he organised three schools in Cargèse (1988, 1993, 1998) and published books which are references for a whole generation.

We will all cherish his memory and deeply miss this friend, this colleague who had mysteriously retained in the sometimes muddy waters of scientific competition the candour of an intelligent child and the humorous smile of a quiet philosopher.

Pierre Léna

1288. E. Tolstoy: Star Formation Histories of Nearby Galaxies and the Connection to High Redshift. Invited review to be published in the proceedings of the XVIIIth Moriond Astrophysics Meeting "Dwarf Galaxies and Cosmology", Les Arcs, March 1998, eds. T.X. Thuan, C. Balkowski, V. Cayatte, J. Tran Thanh Van.
1289. F. Bresolin, R.C. Kennicutt, Jr., and D.R. Garnett: The Ionizing Stars of Extragalactic HII Regions. *Astrophysical Journal*.
1290. D. Baade: Nonradial Pulsations of BA Supergiants and Be Stars. Invited talk given at IAU Coll. 169 "Variable and Nonspherical Stellar Winds", Heidelberg, June 15–19, 1998, eds. B. Wolf, A.W. Fullerton and O. Stahl.
1291. M.F. Sterzik and R.H. Durison: The Dynamical Decay of Young Few-Body Stellar Systems. I. The Effect of a Mass Spectrum for  $N = 3, 4$ , and 5. *A&A*.
1292. K. Iwamoto et al.: A 'Hypernova' Model for SN 1998bw Associated with Gamma-Ray Burst of 25 April 1998. *Nature*.

## Scientific Report

Scientific Report No. 18 – June 1998: "A Catalogue of Quasars and Active Nuclei (8th Edition)." Edited by M.-P. Véron-Cetty and P. Véron.

## PERSONNEL MOVEMENTS

### International Staff (1 July – 30 September 1998)

#### ARRIVALS

##### EUROPE

HILL, Vanessa (F), Fellow  
DUNCAN, Douglas (USA), Associate, Office for Science  
VAN BEMMEL, Ilse (NL), Student  
AMICO, Paola (I), Astronomical Data Quality Control Scientist  
HANUSCHIK, Reinhard (D), Astronomical Data Quality Control Scientist  
CRISTIANI, Stefano (I), Associate, Office for Science  
FARINATO, Jacopo (I), Associate, Support Engineer to the Adaptive Optics Group  
RAUCH, Michael (D), User Support Astronomer  
CURRIE, Douglas (USA), Associate, Support Engineer to the Adaptive Optics Group  
FYNBO, Johan (DK), Student