



## Okkie de Jager (1961–2010)

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Okkie de Jager of the Centre for Space Research of the North-West University lost his valiant battle against cancer on 14 December 2010 at the age of 49. His main field of interest was gamma-ray astrophysics and his research included theoretical work, data analysis, instrument design and innovative astro-technologies. He remained active until the day that he was admitted to hospital for the last time, less than two weeks before his death. We mourn the passing of a brilliant researcher whose dedication to his work, positive outlook on life and contagious enthusiasm for exploring the unknown and explaining the unexplained made him a great colleague and a much sought-after collaborator.

Ocker Cornelis de Jager was born on 09 April 1961 in Pretoria. He completed his matric in Parys in the Free State, and his undergraduate and graduate studies at the Potchefstroom University for Christian Higher Education (now the North-West University). In 1987 he completed his PhD in Physics with a thesis entitled 'The analysis and interpretation of VHE gamma-ray measurements' under the supervision of Christo Raubenheimer.

He was appointed as Junior Lecturer in 1984 at Potchefstroom University, Research Scientist in 1985, Senior Research Scientist in 1988 and Associate Professor in 1994, and was promoted to Professor in 1996. De Jager established himself in the field of gamma-ray astrophysics during the early years of his career and was twice awarded the President's Award of the National Research Foundation (NRF) of South Africa for his contributions to this field of research. In 1991 he won the competitive National Research Council Research Associateship, which enabled him to complete a post-doctoral fellowship at NASA Goddard Space Flight Center. There he worked with Alice Harding, and they were the first to develop a relatively accurate procedure to predict the high energy to very high energy gamma-ray spectrum of the Crab Nebula. Subsequent gamma-ray observations confirmed the predicted gamma-ray fluxes. Additionally, he worked with Floyd Stecker and they were the first to predict the cosmic horizon for very high



Prof. Okkie de Jager

energy gamma rays from active galactic nuclei with relative accuracy. This opened a whole new field of research, and serves as a motivation for new large projects which attempt to reduce the gamma-ray threshold so that the cosmic horizon can be increased. Many other successes followed, and in 1995 he received the Shakti P. Duggal Award for exceptional contributions in cosmic-ray physics, and in 1996 the British Association Medal for the Advancement of Science.

De Jager became involved at the international level very early in his career. Between 1989 and 2003 he made significant contributions towards human capacity development for the MAGIC gamma-ray experiment in La Palma, Spain, a large atmospheric imaging Cherenkov telescope. He was also involved in the High Energy Stereoscopic System (H.E.S.S.) since the late 1990s, and was group leader for the South African participation in this highly successful gamma-ray project. The H.E.S.S. collaboration was awarded the prestigious European Descartes prize for Research for 2006, and the 2010 Rossi Prize of the High Energy Astrophysics Division of the American Astronomical Society. De Jager was leader of the working group on supernova remnants, pulsars and plerions for the international Cherenkov Telescope Array since 2008. The fact that De Jager was offered the directorship of a prestigious European research institution is testament to his international standing; that he turned it down demonstrated his loyalty to his country.



His international involvement did not diminish his interest and his involvement in science in South Africa, especially multi-wavelength astronomy. He served on various NRF and Department of Science and Technology (DST) panels, was a lecturer in the National Astrophysics and Space Science Programme and also sponsored local outreach programmes. He was author of 170 publications; and eight master's students and eight PhD students completed their studies under his supervision. In 2008 he was awarded a DST/NRF Research Chair in Astrophysics and Space Physics. During 2010 he presented three invited talks at international conferences. He

also held three international technology-based patents, two of which are registered in the USA.

Outside of astrophysics, de Jager had a keen interest in the postal history of South Africa. He received an award for his exhibit entitled 'Centenary Celebration of the Postal History of the Union of South Africa' at an international stamp show held in Johannesburg in October 2010.

De Jager is survived by his wife Estie and 13-year-old daughter Danél.