In Memoriam

JURIJ FRANTSMAN

(20.03.1939 – 20.07.1998)

On July 20, 1998 the outstanding, internationally well-known Latvian astronomer, prof., Dr. habil. phys. Jurij Frantsman suddenly died while he was on his return trip from the IAU Symposium No. 190 in Victoria, Canada.

Jurij (Ju. L., Yu. L.) Frantsman (in Latvian – Jurijs Francmanis) was born in Riga, Latvia on March 20, 1939. He studied at the University of Latvia, Faculty of Physics and Mathematics. Already during his years of study he started research activities: he took part in observations at the Observing Station of the Artificial Earth Satellites of the University, observed and studied noctilucent clouds at the Latvian Branch of the All Union Astronomical and Geodetical Society (now Latvian Astronomical Society). J. Frantsman graduated from the University of Latvia in 1961 with his

thesis “Determination of positions of planetary nebulae from objective prism plates” under scientific advisery by prof. B. A. Vorontsov-Veliaminov (Moscow University).

The next three years he worked at the Astronomical Observatory of the University of Latvia under supervision of prof. K. Steins and M. Dirikis. He was engaged in observations on the transit instrument of the Time Sevice, in the treatment of observations of Earth satellites and the study of stellar motions in associations.

The scientific interests of J. Frantsman, however, turned to astrophysics, and in 1964 he started post-graduate studies in Moscow at the Astronomical Council (now Astronomical Institute) of the USSR Academy of Sciences. His scientific adviser was prof. Mrs. Alla Mashevich, the leading expert in stellar evolution in the Soviet Union. In 1967 he finished his dissertation “Structure and evolution of massive stars depending on mass, abundance and other parameters”, defended it at the Sternberg Astronomical Institute of the Moscow University and received the degree of Candidate of Sciences in Physics and Mathematics (equivalent to Dr. Phys. in Latvia or Ph. D. in Western countries).

The further career of J. Frantsman – researcher, senior researcher, leading researcher, professor – was associated with the Radioastrophysical Observatory of the Latvian Academy of Sciences. For several years he was the scientific secretary of the observatory. He continued investigations of stellar structure and evolution, concentrating his attention on stars of low and intermediate mass in late stages of their evolution, mostly on the asymptotic giant branch (AGB). He studied the evolution of carbon and barium stars – traditional research objects at the Radioastrophysical Observatory. Modeling stellar evolution he managed to explain observational data of stars in the Magellanic Clouds and the Milky Way galaxy. Also he investigated the origin of the interstellar isotope Al^{26} . These studies were submitted as a dissertation for the degree of Doctor of Sciences in Physics and Mathematics (Dr. habil. phys.) which he defended at the Moscow State University in 1991.

J. Frantsman was the head of several research projects: since 1997 – of the research project of the Latvian Council of Sciences “Investigation of the processes in the stars of late evolution stages, interstellar medium and the Sun: nonstationary phenomena and changes of chemical abundances”.

During his last years J. Frantsman studied the AGB star evolution dependance on initial chemical composition and modeled the population of AGB stars formed as a result of both single star evolution and evolution in close binary systems, where mass transfer affects the evolution of the star. He found that the N-type carbon star population in the Magellanic Clouds is not homogeneous but consists of objects belonging to two different stages of evolution: the usual TP-AGB carbon stars, which have formed due to dredge-up processes, and E-AGB stars, which have been enriched in carbon by mass transfer in close binary systems. This allowed him to explain a substantial extension of luminosities of carbon stars in the Clouds. Stars in both evolutionary stages have been observed in some LMC clusters.

J. Frantsman is the author of more than 70 scientific publications and many popular-scientific papers. Since 1994 he was a Corresponding Member of the Latvian Academy of Sciences. J. Frantsman was also a member of the Editorial Board of the international journal "Baltic Astronomy" and the astronomical almanac in Latvian "Astronomiskais kalendārs", a member of the IAU Commissions 35 (Stellar Constitution) and 42 (Close Binary Stars), a member of the European Astronomical Society, Euro-Asian Astronomical Society and Latvian Astronomical Society.

The untimely death of prof. J. Frantsman is a heavy loss not only to his family and the Institute of Astronomy of the University of Latvia – the new institution established in 1997 by merging the Radioastrophysical Observatory of the Latvian Academy of Sciences and the Astronomical Observatory of the University of Latvia. The loss of his opinion, advice and responsiveness will be felt for a long time by the people who knew him.

Institute of Astronomy
of the University of Latvia