

Amsterdam, February 12<sup>th</sup>, 2024.

Report visit Dr. J. Nichols, October 4 – 17, 2023  
NOVA, V-287

Dr. Joy S. Nichols (Research Associate, CfA, Harvard/Smithsonian, Cambridge) visited the Anton Pannekoek Institute to work on our project on the so-called gamma-Cas variables, an enigmatic subgroup of about a dozen out of a few hundred Be stars. This collaboration involved a joined effort to combine the analysis of specific X-ray lines in Chandra spectra of these variables (her part) with their UV wind line behavior (my part). This may provide support for one of the two proposed mechanisms as proposed in the literature. The properties of 74 X-ray lines of 37 stars were measured, including non-Be stars for comparison.

The working plan was to finalize the planned paper during the proposed 10-day visit to Amsterdam. During this very fruitful visit Dr. Nichols gave a seminar at the Anton Pannekoek Institute about the X-ray line properties of early-type stars. In addition, we found out that there was an archive available of 23 X-ray spectra of the star gamma Cas itself, taken with the NICER instrument onboard the International Space Station during several years. Most of our time was spend to analyze and quantify the considerable variability, with emphasis on the error bars of the many free parameters of the at least three plasma components.

We were not able to complete this project as aimed for, but reformulated the goals to incorporate the new results in a forthcoming paper, of which a first draft was prepared. We continue working remotely via Zoom meetings on the project.

The financial report has been approved in the meantime, as attached. The same travel claim with equal contribution of the LKBF was also approved and completed.

We are truly very grateful for the generous support of NOVA, which made this fruitful visit possible. I apologize for the unforeseen delay of the report.

Best regards,  
Huib Henrichs



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