REPORT ON THE HABILITATION THESIS ON 'PROMĚNNÉ HVEŽDY V OTEVŘENÝCH HVĚZDOKUPÁCH' ('VARIABLE STARS IN OPEN CLUSTERS') SUBMITTED BY MILOSLAV ZEJDA

The candidate Dr. Miloslav Zejda has submitted the habilitation thesis under the title 'Proměnné hvezdý v otevřených hvězdokupách' ('Variable stars in open clusters'). The main body of the habilitation thesis comprises 36 pages and is supplemented with the candidate's selection of his the most important and representative research papers. The habilitation is complemented with a detail candidate's CV and technical report on his publication records including the evaluation of the citations and appreciations of his research achievements. Also, there is a detail report on his university teaching load and popularisation of science.

In the main body of the habilitation thesis Dr. Zejda has justified his prime research interest and this is the study of variable stars in stellar open clusters. This is a rather big task of an extreme astrophysical importance. The synergy of detail studies of different kinds of variable stars in open clusters is rewarding both for a better understanding of stellar structure and evolution and for undedtsanding the origin and evolution of stellar clusters. It is impressive the candidate's insight in very many sorts of variable stars, not a very common among researchers who are typically focused only in some specific type of variables. Nowdays, this a broader knowledge might be rewarding as the importance of more complex variability, i.e. pulsating stars in eclipsing binaries, has been recognised and is in focus of the modern astrophysical studies.

The personal touch in this 'cover' text of the candidate's habilatation thesis is very much appreciated. His long observational experience (observer myself I am deeply impressed that the candidate secured observations of about 1100 eclipsing binaries!) is invaluable in the proper supervising doctoral and master students in their first steps in a 'real' research. Also, it should be noticed that his text is clearly and methodically well written, and his university teaching experience is obvious.

Dr. Zejda has achieved a high standard in his research papers. He has selected the 12 papers as the most important. I would emphasis the 2 topics which for my taste is the most important. The first is his participation in Brno team leading by Prof. Zdeněk Mikulášek on the development of advanced methods in period analysis of variable stars. Brno school on variable stars is world-wide renewed and the expertise in the evaluation of timing of minima in eclipsing binaries is probably the highest achievemnts acomplished. Now-days, in particularly with the exoplanets findings and characterisation, timing has bacome very important and promising tool, and the candidate's research in this field even more prosperous.

I found catalogusing variable stars in open clusters as the second outstanding candidate's achievemnt. Catalogusing, archiving and/or classifing different sorts of the observations are in

a foundation of the astronomical research. Extreme patience, care, and knowledge is needed for the preparation of the catalogues or atlases. The candidate's 'Catalogue of variable stars in open cluster fields' (Astronomy & Astrophysics, 548, A97, 2012) is deposited at the CDS in Strasbourg and contains more than 18 000 entries for about 2100 open clusters. The tedious work to compile such a massive data should be admired, and the researchers in the field would certainly appreciate the catalogue which would make their studies much more easy and more efficient. I think, Dr. Zejda's Catalogue is accomplished in that best tradition of the Czech astronomy. If I am right, the cataloque of planetary nebulae compiled by Drs. Perek and Kohoutek is still the most cited paper ever published by Czech astronomers.

Research activity and achievemnets of the candidate is a high. He has accomplished reputation in the field, and is also well known in the community for his excellent organisation and editorial work of the conferences. He has established a broad and productive international colaboration, and is involved or leading important research projects elsewhere. I am impressed on his devotion to the university teaching and supervising students, both at the bachalor, master and PhD level. Number of the textbooks on the courses he is teaching which he authorised is amazing.

Miloslav Zejda's habilitation thesis of "Variable stars in open clusters" does meet the standard requirements for a habilitation thesis in the field of Theoretical Physics and Astrophysics.

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