



Slovak-Bavarian collaboration on the development of telescope instrumentation

Thorsten Döhring¹, Theodor Pribulla², Richard Komžík², Michael Mann¹, Peter Sivanič², Manfred Stollenwerk¹

¹ Aschaffenburg University of Applied Sciences, D-63743 Aschaffenburg, Germany

² Astronomical Institute of the Slovak Academy of Sciences, SK-05960 Vysoké Tatry, Slovakia



Abstract

Within the project SLOBATCO (Slovak-Bavarian Telescope Collaboration) the Astronomical Institute of the Slovak Academy of Sciences and Aschaffenburg University of Applied Sciences collaborate in the development and commissioning of the new Ø1.3 m astronomical telescope and the corresponding scientific instrumentation. The project is funded by the Bavarian Academic Center for Central, Eastern and Southeastern Europe (BAYHOST). Technical work packages are targeting filter wheel software for the VIS camera, additional IR filters, and an upgrade of the mirror coating facility by additional sputtering equipment.



The new 1.3 m telescope

Introduction

The aim of the project SLOBATCO (Slovak-Bavarian Telescope Collaboration) is the effective combination of experience, expertise and instrumentation of the Astronomical Institute of the Slovak Academy of Sciences and Aschaffenburg University of Applied Sciences for the development and commissioning of a new astronomical telescope and the corresponding scientific instrumentation. The project is funded by Bavarian Academic Center for Central, Eastern and Southeastern Europe (BAYHOST). Thanks to the European Regional Development Fund (ITMS No. 26220120029) the Skalnaté Pleso observatory in Slovakia got a new Ø1.3 m telescope. The Stellar department of the Astronomical Institute of the Slovak Academy of Sciences (AI SAS) is currently installing this new Ø1.3 m alt-azimuth Nasmyth-Cassegrain telescope (first light was in 2014) at its mountain observatory at Skalnaté Pleso (altitude 1783 m). The new telescope can be operated in a fully remote-controlled mode requiring minimum manpower. Corresponding advanced focal instruments for the new telescope are being developed as well. However, having only a small amount of dedicated staff at the observatory, the instrument development and improvement is a slow process. Therefore the Slovak team is very interested to get support from international partners. Astronomy is the passion of the involved professors from Aschaffenburg University. Motivating for them is the direct access to a large professional astronomical telescope and the use of their technical know-how in an interesting field of research.



Bavarian team



Aschaffenburg University

Research stays

September 2018

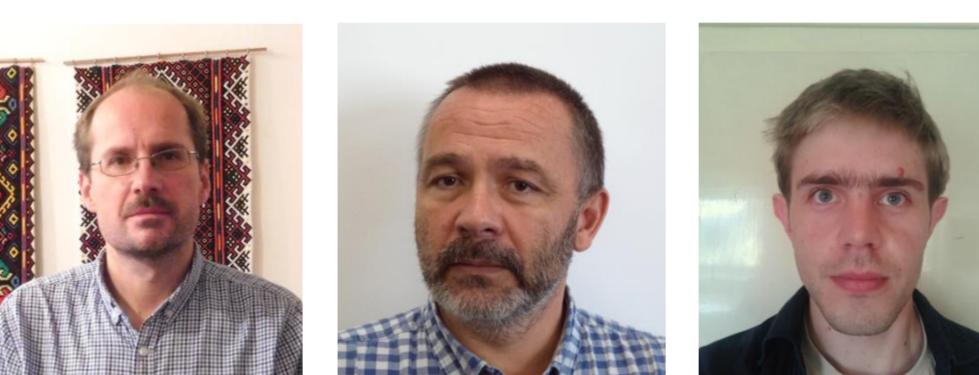
Travelling costs are covered
by a BAYHOST grant.



October 2018



Skalnaté Pleso Observatory



Slovak team

Acknowledgement

The SLOBATCO project is funded by Bavarian Academic Center for Central, Eastern and Southeastern Europe (BAYHOST).

The German funding agency BAYHOST supports Bavarian universities and universities of applied science through its specific competencies; by supporting their collaboration with academic organizations in our partner countries and by establishing new partnerships.



VIS camera & filter wheel

Work package WP1

The large frame CCD camera will benefit from the development of dedicated control software which would operate the external shutter and the filter wheel. For the IR camera up to now only one fixed filter (J passband) is available, but more specialized filters are needed for the intended astronomical observations.



Mirror coating facility

Work package WP2

It is considered to improve the existing coating facility by installing sputtering technology. Here the expertise of the scientists from Aschaffenburg University will be beneficial, they are operating similar equipment in their laboratory and could produce test coatings.

Outlook to the future

The SLOBATCO project is the starting point for an intended long-term cooperation and will also develop ideas for future joint projects.

References

- [1] T. Döhring, K. Loosen, P. Hartmann: "The technical challenge of large ELT filters," Proc. SPIE Vol. 6273, 62730U (2006).
- [2] R. Hudec and T. Döhring: "JEUMICO: Czech-Bavarian Astronomical X-Ray Optics Project", CAOSP 47, 170 - 177 (2017)
- [3] T. Pribulla et al.: "Affordable échelle spectroscopy with a 60 cm telescope", Astronomische Nachrichten 338, 35 (2015)
- [4] A.-C. Probst et al.: "Influence of sputtering pressure on the nanostructure and the X-ray reflectivity of iridium coatings", Surface & Coatings Technology 343, 101–107 (2018)