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IPSA VEGA AND ITS COLLABORATION WITH THE SAF

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Abstract. Collaboration between IPSA VEGA and the SAF's various commissions has taken the form of various projects carried out by members of the IPSA VEGA association thanks to the Société Astronomique de France. IPSA VEGA relied on the SAF to design a mirror with the help of the Instrument commission, and to study double stars with the commission of the same name.

Keywords: collaboration, double stars, mirror, telescope

1 Introduction

IPSA Vega went to the Sorbonne in collaboration with the double star commission, which helped us choose targets and use the Sorbonne telescope. The instrument we chose for our measurements is a telescope with a diameter of 153 mm and a focal length of 2300 mm.

Since February 2024, IPSA Vega joined the instrument commission of the SAF, which meets on Tuesdays from 7PM and Saturdays from 3PM. In order to polish its own mirror, IPSA Vega went to the historical building of the Sorbonne. The long-term plan of this collaboration is for IPSA Vega to build their own telescope.

2 Results of the collaboration

2.1 Double star commission

The ρ and θ: these 2 data are used to classify double stars: The position angle, θ, is expressed in degrees and decimals. It is the angle formed by the direction of North and the line joining the two components. The separation distance, ρ, is expressed in degree seconds. It's the angular distance separating the two components.

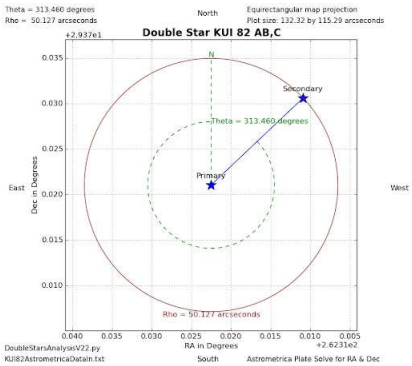

Fig. 1. Example of ρ and θ in the case of the double star KUI 82 AB,C

Thanks to the Reduc software, we were able to obtain results that were consistent and corresponded with other data found by others, enabling us to validate our initial hypotheses and reinforce the reliability of our study by comparing our results with those of previous research carried out by various experts in the field.

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2.2 Instrument commission

To create a mirror, 4 steps are required, which means that polishing a mirror is a long process, that takes around several months. The first step is to hollow out the mirror spherically and improve its surface finish. The second is polishing. Its purpose is to remove all irregularities from the mirror, making it totally smooth and transparent. The third stage is a fairly short one, as it consists in checking the sphericity of the mirror's surface. The final stage involves parabolizing the mirror. This means that we transform the shape of the mirror into a parabola using an eddy current machine.

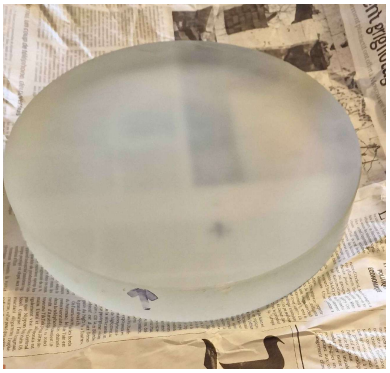

Fig. 2. Photography of the mirror that IPSA Vega is actually doing at the Sorbonne

Currently, IPSA Vega finished the first part of its mirror, which means that IPSA Vega finished hollowing out the mirror, its surface finish being completely improved.

3 Conclusions

IPSA VEGA will continue to take part in various commissions, and outings and collaborations with the Juvisy observatory will be scheduled. IPSA VEGA will also become more involved in the youth commission and take part in more events, such as ICAY.

We would like to thank the SAF, in particular the double star commission, as well as the instrument commission.