

CC1: 'Comment on egusphere-2025-2563', Thomas Martyn, 29 Aug. 2025

We would like to thank the reviewer for the helpful comments.

The rationale for the paper's study is set out clearly in the Introduction – particularly the difficulties in obtaining regular Polaris measurements. Attaching numerical values to this would improve context e.g. number of visits / measurements annually, number not possible due to cloud cover etc. This could be included in the form of a table and would give improved background.

Response:

We appreciate your suggestion, but we do not officially count days when observations are prevented by cloud cover etc. We have included a table showing the actual number of observations made over the past few years instead.

The description of the process used to calculate the GNSS derived baseline is clear, however as how mentioned by a prior commentor, the schematic could be made to more closely represent the observatory layout.

Response:

The schematic in Figure 2 has been modified.

The fundamental aspect of the study is the ability of GNSS data to accurately determine the observatory azimuth. Much of the discussion, however, focuses on the precision of the measurements obtained with little discussion given to the accuracy of the measurements. To this end, further details of the post processing could be added and their effects / importance discussed. For instance: the effect of using local Continuously Operating Reference Station to constrain positions (Line 86: Because of the short baseline length, neither the atmospheric delay correction nor the ionospheric delay correction is made)

Response:

We may not understand the meaning of “the effect of using local Continuously Operating Reference Station to constrain Positions”, however, we believe that what is important in calculating the azimuth angle between two points is their relative position. Therefore, we do not think it's necessary to discuss their absolute positions. Additionally, the “accuracy” of the measurement has been discussed in comparisons to Polaris observation. On the other hand, post-processing is summarized in Appendix A. Of the analysis methods compared, static mode analysis showed the highest accuracy. Therefore, we decided to use the static mode in this study.