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ORIGINAL ARTICLE

Pointing of HAGAR telescope mirrors

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Abstract An array of seven atmospheric Cherenkov telescopes was commissioned at a high altitude site in Hanle in the Ladakh region of the Himalayas. The array called HAGAR has been designed to observe celestial γ-rays of energy >100 GeV. Each telescope is altitude-azimuth mounted and carries seven parabolic mirrors whose optic axes are co-aligned with the telescope axis. The telescopes point and track a celestial source using a PC-based drive control system. Two important issues in positioning of each HAGAR telescope are pointing accuracy of telescope axis and co-alignment of mirrors' optic axes with the telescope axis. We have adopted a three pronged strategy to address these issues, namely use of pointing models to improve pointing accuracy of the telescopes, RA-DEC scan technique to measure the pointing offsets of the mirrors and mechanical fine-tuning of off-axis mirrors by sighting a distant stationary light source. This paper discusses our efforts in this regard as well as the current status of pointing and monitoring of HAGAR telescopes.

Keywords Telescope pointing · γ-ray astronomy · Pointing model · Atmospheric Cherenkov telescopes

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