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Superb Astronomical Seeing at Dome A

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Following the installation of two DIMMs at Kunlun Station, Dome A in early 2019, we were able to directly measure astronomical seeing through the winter for the first time. At a height of just 8 meters, the seeing was detected as good as 0.13 arcsec. For 31% time, it was free of boundary layer turbulence, and consequently was the free-atmosphere seeing only, with a median of 0.31 arcsec. We also find that the seeing and boundary layer thickness are correlated with local temperature inversion which is monitored by KLAWS, a multi-layer automatic weather station. Then we confirm that the median boundary-layer thickness is about 14 m, while it is 30 m at Dome C. These results further support Dome A to have the best conditions for optical/infrared astronomy.

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