

# Ultra-precision turning and interferometric testing process for KAONICS optical parts

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The use of single-point diamond-tipped tools and specialized machinery for producing precise optical surfaces is called "single-point diamond turning". We have been used this fabrication process in a framework of the KAONICS (KAO Near-Infrared Camera System) project, developing in Korea Astronomy and Space Science Institute. We finished a preliminary optical design and started manufacturing aluminum optical parts. A quality of optical surfaces corresponds to a  $\lambda/15$  criterion and surface roughness, examined using interferometric tests, not exceeds 5 nm. A turning machine was used is "Nanoform 600". Quality test has been performed using an "WYKO 6000" interferometer with three transmission spheres of  $f/0.75$ ,  $f/3.2$  and  $f/7.0$ . Future plans of manufacturing and testing of KAONICS optical parts are presented.