

The GaoFen-5 satellite mission for air quality monitoring in China

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The Chinese government has developed GaoFen series of satellites to observe the Earth, with GaoFen-5 for air quality monitoring specially. There are four main instruments onboard GaoFen-5, Directional Polarization Camera (DPC), Environment Monitoring Instrument (EMI), Atmospheric Infrared Ultraspectral (AIUS), and Greenhouse-gases Monitoring Instrument (GMI). DPC is similar as PARASOL, which mainly measures scattering properties of aerosol and clouds with polarization. The EMI with spectrum range in 270-790 nm can obtain information of trace gases such as NO₂, SO₂, and O₃ as OMI. At the same time, AIUS can provide vertical profiles of trace gases such as O₃ with occultation observation. GMI measures information of greenhouse gases of CO₂ and CH₄ with shortwave infrared bands. The integrated observation of these instruments can provide a comprehensive insights into the air pollution in China. As all the instrument test and algorithms reached the end, the GaoFen-5 satellite is expected to be launched later in 2018.

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