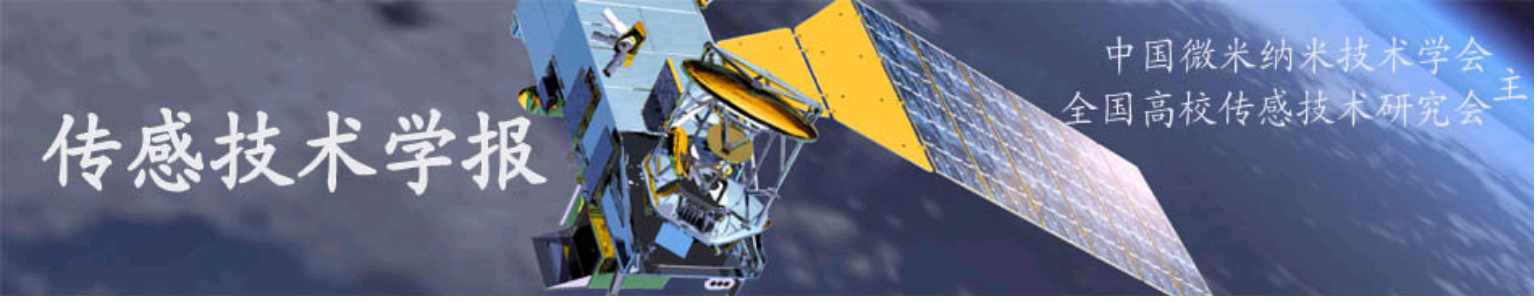

利用四棱锥传感器检测光学拼接镜的法向光程差

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摘　要：

研制光学天文望远镜拼接主镜时，需要精确检测各子镜单元之间的法向光程差。在对四棱锥波前检测原理分析的基础上，通过反射立方体模拟拼接镜面，开展锥传感器的检测实验，验证了四棱锥传感器检测信号和拼接镜子单元间的piston误差信号之间存在确定的函数关系。在一个波长的位移行程内，目前可以达到纳米的测量精度

关键词：天文光学望远镜；法向光程差；四棱锥传感器；拼接镜

Study on Measuring Piston Error of Segmented Mirror Using Pyramid Sensor

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Abstract:

It is necessary to measure the piston error of sub-elements accurately when developing segmented mirror of optical telescope. On the basis of analyzing the pyramid sen (PS) principle, some piston measurements were carried with sub elements stimulated by two reflective cubes。A certain relationship is confirmed between the sensing va and the relative piston value of sub-elements. At present, the measuring accuracy is about several tens of nanometers when the relative displacement between two eleme is within one wavelength

Keywords: astronomical optical telescope; piston; pyramid sensor; segmented mirror

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