

SPACE DEBRIS LASER RANGING AT YUNNAN OBSERVATORIES.

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Abstract: In recent years, with the continuous increase of space activities, space debris is also becoming more and more. Spacecraft in orbit are being threatened by space debris, so many countries have developed detection techniques for space debris, and the diffuse reflection laser ranging of space debris is a new technology. The research progresses of space debris laser ranging at several stations in the world are introduced. The first diffuse reflection laser ranging echo of space debris was received successfully in June 2010 at Yunnan observatories. The structure of the systems and the key techniques for space debris laser ranging at Yunnan Observatories are described. At the beginning of 2011, the experiment of space debris laser ranging is carried out again. The precision of space debris laser ranging is given in this paper. At last, the applications of space debris laser ranging are discussed, such as space debris orbit improvement and preliminary scale determination of space debris.