Observations of the inner satellites of Jupiter and faint satellites of Saturn on Pik Terskol: first results.

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Astrometric observations of the inner Jovian satellites Amalthea, Thebe, Metis and the outer Saturnian satellites Phoebe and Iapetus were conducted at Terskol observatory in September 1998 and October-November 1999. The 2-meter-Zeiss-RCC Telescope equipped with the Two-Channel Focal Reducer of the Max-Planck Institute fuer Aeronomy was used. For the inner and outer satellites two different methods of astrometric reduction are applied; in each case it is necessary to calibrate the telescope-detector combination. Tests of the astrometric quality from images of astrometric standard fields indicate that the accuracy of star positions obtained with the focal reducer ranges from about 30 mas to 120 mas. The positions of the inner Jovian satellites are referred to the Galilean ones. Mean residuals (O-C) have a standard deviation of the order of 150 mas. The reference catalogue USNOA 2.0 was used to derive right ascensions and declinations of Phoebe and Iapetus. The comparison of our Phoebe observations with its most recent ephemeris leads to an (O-C) of 110 mas.