Radio tracking of Smart-1 with European radio telescopes

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The Smart-1 spacecraft was observed with three European radio telescopes (32 m Medicina, Italy; 14 m Metsähovi, Finland; 25 m Westerbork, the Netherlands) on 25 May 2006. The observation was conducted at the S-band (around 2.3 GHz) in both left- and right-hand circular polarisation. The observation lasted for more than a full Smart-1 orbit and included one occultation event. The data were recorded on the VLBI Mk5A recording system. Data processing was done with the Huygens VLBI Software correlator at JIVE, developed originally in support to the Huygens VLBI Tracking Experiment. We will demonstrate results of the tracking underlining the potential of the technique for prospective Lunar and planetary missions. The quality of the data is so high that it would allow observers to address scientific issues in the areas of planetology, physics of the interplanetary medium and fundamental physics. The experiment should be seen as a demonstrator of potential spin-off of both the Smart-1 mission and Huygens VLBI Tracking experiment.