

# Second European Physical Society Conference on Gravitation: measuring gravity



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## Benefit of new high-precision LLR data for the determination of relativistic parameters

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From 1969 on, Lunar Laser Ranging data are collected by various observatories and analyzed by different analysis groups. In the past years observations with larger telescopes (APOLLO) and at infrared frequencies (OCA, Wettzell) are carried out, which resulted in a better spread of precise LLR data over the lunar orbit and the observed reflectors on the Moon. In Germany, from the early 80ies on, the software package LUNAR has been developed to study the Earth-Moon system and to determine several related model parameters. Research covered physical libration and orbit of the Moon, coordinates of observatories and retro-reflectors, Earth orientation parameters and, with special modifications, tests of Einstein's theory of relativity. Including the new data, we show recent results for relativity parameters related to the equivalence principle, temporal variation of the gravitational constant and for a selection of PPN (Parametrized Post-Newtonian) parameters.

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