

The deep lunar interior with a low-viscosity zone: Revised constraints from recent geodetic parameters on the tidal response of the Moon

\*Yuji Harada<sup>1,2</sup>, Sander Goossens<sup>3</sup>, Koji Matsumoto<sup>4</sup>, Jianguo Yan<sup>5</sup>, Jinsong Ping<sup>6</sup>, Hiroto Noda<sup>4</sup>, Junichi Haruyama<sup>7</sup>

1.SSI, MUST, 2.ERI, UT, 3.CRESST, UMBC, 4.NAOJ, NINS, 5.LIESMARS, WHU, 6.NAOC, CAS, 7.ISAS, JAXA

We revisit the constraints on the deep lunar interior with a possible low-viscosity zone at the core-mantle boundary obtained from our previous forward modeling of the tidal response of the Moon, by comparing a numerical model with several tidal parameters that have been improved or are newly determined by recent geodetic observations and analyses from GRAIL (gravity), LRO (shape), and LLR (rotation). Our results are in principle consistent with the latest data and lead to a thicker low-viscosity layer (with an outer radius of about 540 to 560 km, which is much larger than that of about 500 km in our earlier investigation) which reaches just below or inside the place where many seismic nests of deep moonquakes are located.

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