



## Geological Mapping of Mercury

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A complete global series of 1:3M-scale maps of Mercury is being prepared in support of the ESA/JAXA BepiColombo mission [1]. In order to establish the context for the mission operations, and to help redefine mission goals as appropriate, we started a coordinated global geological mapping of Mercury plan, which exploits NASA MESSENGER images at the best resolution available (i.e. global average resolution of 166 m/pixel). Currently, the H02 Victoria [2], H03 Shakespeare [3], H04 Raditladi [4], and H05 Hokusai [5] quadrangles have been completed; the H06 Kuiper [6], H07 Beethoven [7], H08 Tolstoj, H09 Eminescu, H10 Derain [8], H11 Discovery, H13 Neruda [eg 9] and H14 Debussy [10] quadrangles are being mapped. We merge the produced geologic maps together by adjusting mismatches along the quadrangle boundaries. At the current stage, ~40% of Mercury has now a complete 1:3M-scale map and ~60% of the planet will be covered soon by the maps that are being prepared. The global merged output will be used as a digital full-scale product, which will permit detailed global or regional analyses of Mercury's surface. This project will lead to a fuller grasp of the planet's stratigraphy and surface history and is an important goal in preparation for the forthcoming ESA/JAXA BepiColombo mission to aid selection of scientific targets and to provide context for interpretation of new data.

**Acknowledgements:** We gratefully acknowledge funding from the Italian Space Agency (ASI) under ASI-INAF agreement 2017-47-H.0. This is a contribution to Planmap (EU Horizon 2020 grant 776276).

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