

GEOLOGICAL MAPPING OF THE NERUDA QUADRANGLE (H13) OF MERCURY.

B. Man¹, D. A. Rothery¹, M. R. Balme¹, and S. J. Conway², J. Wright¹, ¹School of Physical Sciences, The Open University, Milton Keynes, MK7 6AA, UK (ben.man@open.ac.uk), ²CNRS, UMR 6112 Laboratoire de Planétologie et Géodynamique, Université de Nantes, France.

ABSTRACT

Introduction: With ESA-JAXA's BepiColombo mission underway, it is imperative that a full set of comprehensive geological maps is produced prior to the arrival of the spacecraft, to provide context for BepiColombo's studies [1]. As part of a concerted effort by PLANMAP, Mercury is being mapped on a quadrangle basis [2]. Here I present my mapping progress for the Neruda quadrangle (H13; 180–270°E, 22.5–65°S).

Data and methods:

Primary basemap: H13's ~166 mpp v1.0 BDR tiles with moderate (~74°) solar incidence angles.

Secondary basemaps: low (~45°) and high (~78°) incidence angle basemaps; ~665 mpp enhanced color mosaic; MLA- and stereo-derived DEMs.

Map projection: Lambert Conformal Conic (c. meridian, 135°E; st. parallels, 30°S and 58°S; radius, 2439400 km).

Scale: 1:3M with digitization scale at 1:300k.

Progress: Mapping has focused on crater rim and tectonic structure linework. An extensive thrust system has been identified striking generally N-S. With H13 being perhaps the most densely cratered quadrangle on the planet [3], crater linework and classification are expected to require significant review before completion.

References: [1] Rothery D. A. et al. (2020) *Space Sci. Rev.*, 216, 66. [2] Galluzzi V. et al. (2019) *Geophys. Res. Abs.*, 21, EGU2019-18802-1. [3] Fassett, C. I. et al (2011) *Geophys. Res. Lett.* 38, 6.

Acknowledgments: Gratitude is given to the OU Space SRA and UK STFC (ST/T506321/1). As well as PLANMAP (European Commission H2020 grant 776276) and CNRS and CNES. Gratitude is also given to NASA/JHAPL/CIW for the publicly available MESSENGER products used in this project.

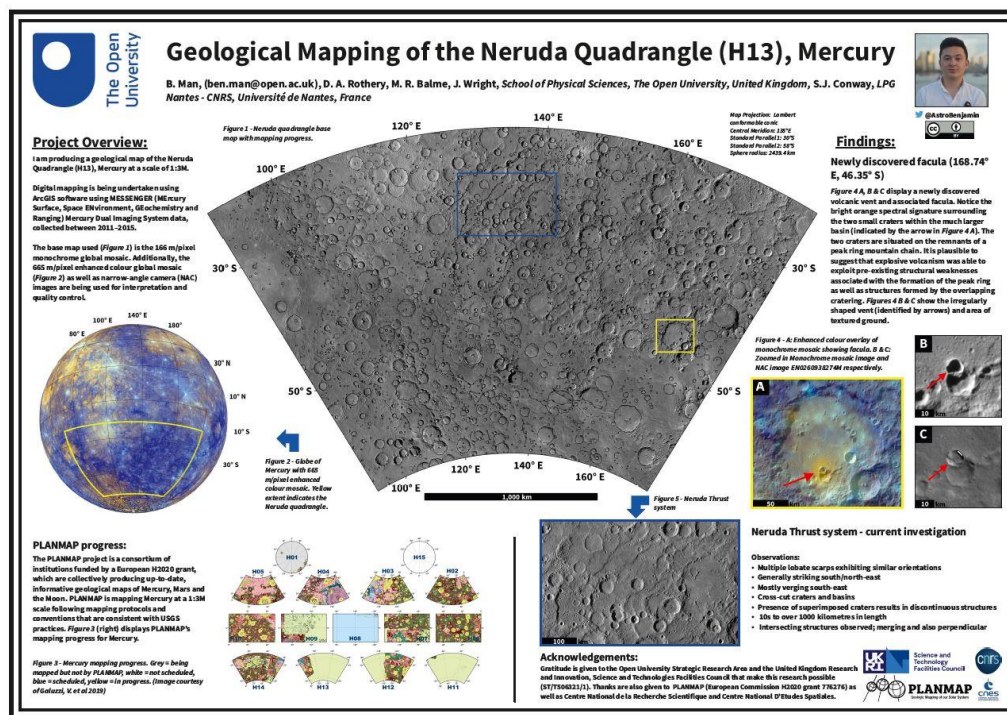


Figure Caption: Mapping progress for H13 Neruda.