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## Team Mapping of Oxia Planum for the ExoMars 2022 Rover-Surface Platform Mission

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Oxia Planum (OP), located at the transition between the ancient terrain of Arabia Terra and the low lying basin of Chryse Planitia, will be the landing site for the ESA-Roscosmos ExoMars Programme's 2022 mission [1]. The descent module and landing platform, Kazachock, will transport the Rosalind Franklin Rover to search for signs of past and present life on Mars, and investigate the geochemical environment in the shallow subsurface over a 211-sol nominal mission.

OP forms a shallow basin, open to the north, characterized by clay-bearing bedrock, and episodic geological activity spans from the ~mid-Noachian to ~early Amazonian in age [2,3,4]. Building a thorough understanding of Oxia Planum prior to operations will provide testable hypotheses that facilitate interpretation of results, and hence provide an effective approach to address the mission's science objectives. To this end, we have run a detailed group mapping campaign at HiRISE-scale using the Multi-Mission Geographic Information System (MMGIS) [5], co-registered HRSC [6], CaSSIS and HiRISE mosaics [7], and 116 1km<sup>2</sup> quads covering the 1-sigma landing ellipse envelope. Complementary CTX-scale mapping covers the wider area around the landing site and is described elsewhere [8].

Throughout 2020, 84 mapping volunteers associated with the mission's Rover Science Operations Working Group followed a pre-formulated programme of training, familiarisation and mapping. With the mapping phase complete, a small sub-team are focused on map reconciliation phase, comprising data cleaning and science decision making. The process will culminate in map finalisation and submission for publication, and use in activities to plan rover science activities.

This campaign yields important advances for overall science readiness of the ExoMars 2022 mission:

- Team experience working, communicating and learning together, valuable for operations.
- Building team knowledge of the landing site, and the main scientific interpretations.
- Curated datasets and software available for team use in ongoing planning.

High-resolution map data representing our geologic understanding of Oxia Planum. This is an input to ongoing RSOWG work to construct the mission strategic plan, which provides science traceability from mission objectives to rover activities.

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