

MOSCOVIENSE BASIN: POTENTIAL LANDING SITE FOR FUTURE LUNAR MISSIONS.

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ABSTRACT

We used Lunar Reconnaissance Orbiter Camera [1], Clementine [2,3] and Kaguya [4,5] data to produce a geological map of the Moscoviense basin region on the Moon. The Moscoviense basin (445 km diameter) is located on the northern hemisphere of the lunar farside at 27°N, 148°E [2]. The eastern mare unit of Moscoviense, is a good candidate landing site for rover-based sampling missions, giving access to both young mare basalts and basin materials. As depicted in earlier maps, Moscoviense basin is in a heavily cratered undivided pre-Nectarian region on the lunar farside (*pNtm*) [6]. Our new map divides the Moscoviense basin and mare units providing a greater level of detail for geological and landing site analyses. Other recent studies focused only on the basin floor [7,8], but not on the whole region. The units in the region can be divided into two groups. The first group contains units associated with the rim of Moscoviense and other crater material. The second group contains the younger dark plains materials, interpreted as mare basalts that fill the basin floor. Both units are affected by craters and secondary crater chains of different ages.

References: [1] Sato et al. (2017) *Icarus*, 296, 216-238. [2] Lucey et al. (1998) *JGR*, 103, 3679-3699. [3] Chevrel et al. (2000) *JGR*, 107, NO. E12, 5132. [4] Lemelin et al. (2016) 47th LPSC #2994. [5] Morota et al. (2009) *GRL*, 36, L21202. [6] Fortezzo et al. (2020) 51st LPSC #2760. [7] Morota et al. (2011) *EPS*, 63, 5-13 [8] Kramer et al. (2008) *JGR*, 113.

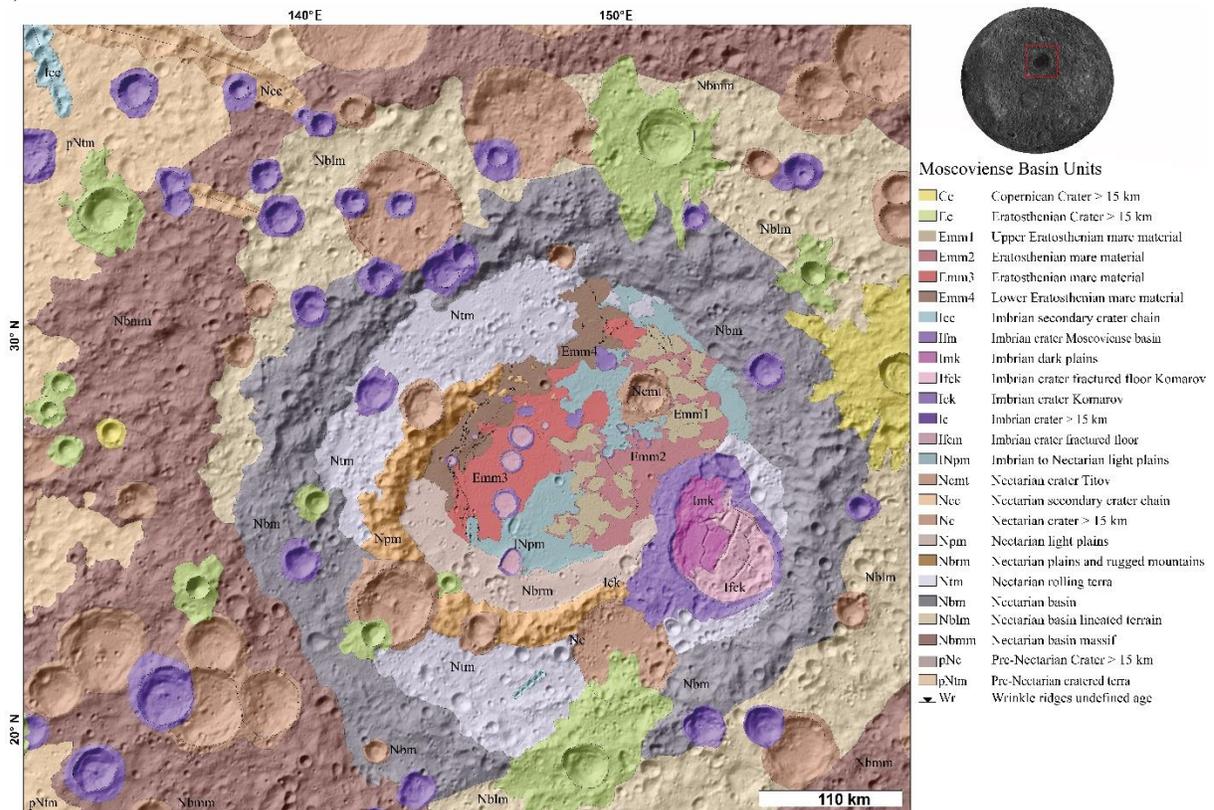


Figure Caption: Geological map of the Moscoviense basin in the northern hemisphere of the lunar farside.