

MAPPING NEPTUNE'S MOON TRITON

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ABSTRACT

Neptune's moon Triton (Fig. 1) was revealed in 1989 by the Voyager 2 encounter. Triton was discovered to be a geologically active moon [1], and its young surface has been linked to its dynamical history as a captured Kuiper Belt Object (KBO) [2] and a possible ocean world.

Triton serves as a bridge between KBOs and icy satellites, characterization of its terrains is important for advancing comparative planetological studies. To-date, no peer-reviewed, broad-scale, detailed geologic map of Triton exists to characterize, classify, and identify geologic surface units and features on Triton.

Previous geologic mapping efforts on Triton did not include a USGS SIM, nor is it available in a digital format for distribution and use by the community. It is necessary for an accessible, digitized, USGS SIM be created to firmly establish the geology of Triton's surface.

Mapping Details: Mapping will occur on the USGS Voyager 2 orthographic color mosaic with a resolution of 600 m/pixel, however for the purposes of mapping the color will be removed from the gray-scale color mosaic. This mosaic covers approximately 1/3 of Triton's surface from 45° to -60°N latitude and -75° to 90°E longitude. This map will provide a framework for future Triton research, future KBO research, and preparation for future missions. We will present in-progress mapping results of the Neptune-facing side of Triton at a scale of 1:5,000,000.

References: [1] Smith B. A. et al. (1989) *Science* 246, 1422-1449. [2] McKinnon W. B. et al. (1995) *Neptune and Triton*, ed. Cruikshank. P807-877.

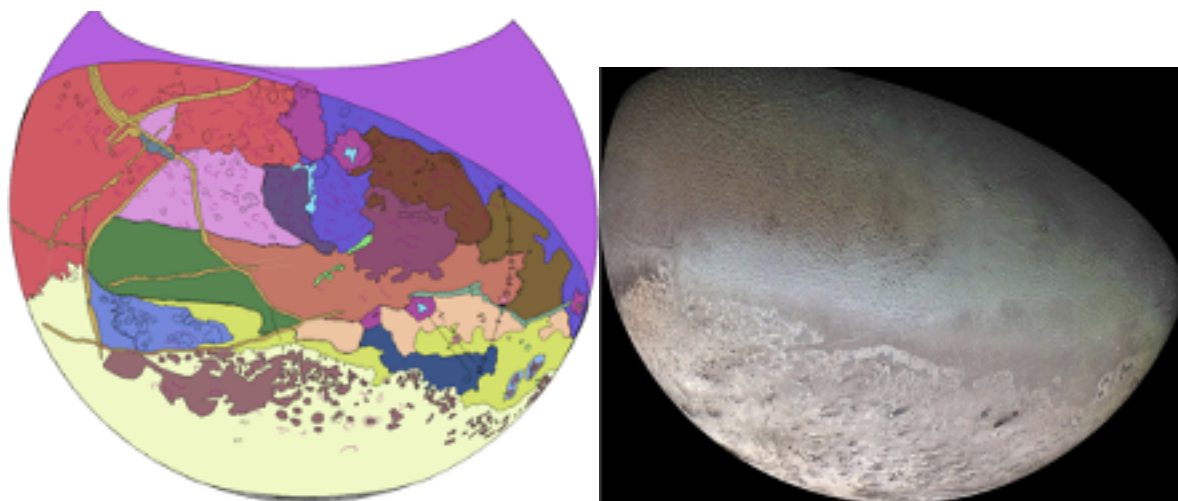


Figure 1: Preliminary mapping results (left) and orthographic color mosaic of Triton's Neptune facing hemisphere.