The History of Water at Lyot Crater, Mars: Possible Surface Manifestations of Ancient Groundwater and/or Recent Climate Change

Thesis

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Map Sheet 1: Geomorphological Map of Lyot Crater, Mars

### Surfaces Units

- **Aed**: Ancillary surface material
  - Dark material located in topographic lows in the interior of Lyot Crater. Represented by dark, textured material. Known to be a resistant fill on the surface.

- **Ed**: Ejecta deposits
  - A mantle of material surrounding Lyot crater. Result from the flow of ice-rich material from the crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Fd**: Fan deposits
  - Material deposited by the flow of ice-rich material, creating a fan-shaped deposit. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Vdu**: Viscous flow deposits
  - Melted material resulting from the flow of ice-rich material. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

### Mantle Units

- **Spu**: Smooth mantle unit
  - Material located in topographic lows in the interior of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Ptu**: Textured mantle unit
  - Material located on the slopes and inner peak ring of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

### Pitted Units

- **Dpu**: Dark pitted unit with inverted polygons
  - Material located on the slopes and inner peak ring of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Dpu**: Dark pitted unit with depressed polygons
  - Material located on the slopes and inner peak ring of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Pfu**: Pitted floor unit
  - Material located in topographic lows in the interior of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

### Crater Units

- **Cru**: Crater wall deposits
  - Material located on the walls of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Cru**: Crater rim deposits
  - Material located on the rims of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Rfu**: Rugged floor unit
  - Material located in topographic lows in the interior of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Ifu**: Inner crater unit
  - Material located in topographic lows in the interior of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

- **Cru**: Central Crater unit
  - Material located in topographic lows in the interior of Lyot Crater. Represented by dark to medium gray material. Known to be a resistant fill on the surface.

### Stratigraphy

- **Unit Description**: Describes the material and its characteristics.
- **Additional Characteristics**: Details the properties and features of the material.
- **Interpretation**: Provides a geological or geophysical interpretation of the material.

**Unit Descriptions**

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**Interpretation**

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### Additional Details

- **Characteristics**
  - The material has been fractured to form the pits. The circular pits are commonly found resting against the slopes of the crater walls and inner peak ring. Lacks superposed by other pitted units.

- **Interpretation**
  - The material is a result of the sublimation of ice. Polygons form as a result of the sublimation of ice-rich deposits.

- **Significance**
  - The material is a result of the sublimation of ice. Polygons form as a result of the sublimation of ice-rich deposits.