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GEOLOGIC INTERPRETATION OF REMOTE SENSOR DATA FOR THE BIG DESERT AREA OF IDAHO

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Investigated area covers basalt lava flows in the Big Desert Area and surroundings. Landsat data collected August 23, 1978, covering the area roughly from 112°45' to 114°00' west and 43°00' to 43°45' north was used for the analysis.

To facilitate computer analysis procedures, the area was divided into two equal parts: eastern and western. A systematic procedure was used to sample and cluster data representing 2% of the area. The resulting cluster classes were merged until the divergences between classes were generally greater than 1500. This resulted in 22 and 19 separable spectral classes for the eastern and western parts, respectively. The final classification was made using a minimum distance to the mean classification algorithm.

Visual analyses utilizing aerial photography of the area were performed to characterize different lava types and to compare with the computer classification results of the Landsat data. In addition, structural analyses and interpretation of fissures within the lava flows and fractures of the surrounding area were performed in order to develop a geological model of the structural control of the lava flows of the Big Desert Area.