

**VOLCANIC GEOLOGY AND STRATIGRAPHY AT PART OF THE BOUNDARY REGION BETWEEN LAVINIA PLANITIA AND LADA TERRA.** J.E. Guest<sup>1</sup>, M.G. Lancaster<sup>1</sup>, K. Roberts<sup>2</sup> and M.H. Bulmer<sup>1</sup>, <sup>1</sup>University of London Observatory, University College London, London NW7 2QS, UK. <sup>2</sup>Dept. of Geological Sciences, Brown University, Providence, RI 02912.

Geological mapping using Magellan SAR data of a region across the boundary between Lavinia Planitia and Lada Terra at about Long. 355 E shows it to have had a complex volcanic and tectonic history.

The oldest materials in the region appear to be radar dark plains with light mottling in places. These plains are cut by fractures and other tectonic features, as well as at least one sinuous channel that may be the result of lava erosion. Superimposed on these plains and the associated structural features is a 75 km diameter impact crater which in turn has been buried by lavas erupted from the Mylitta Fluctus source area. This volcanic complex is associated with the massive lava flow field that extends northwards into Lavinia Planitia for some 800 km. Superimposed on the source area are numerous small shields of a few kilometres in diameter.

The lavas surrounding the Mylitta Fluctus source area are cut to the south by long fractures that are subradial to the Quetzalpetlatle Corona on the northern edge of Lada Terra. These fractures are characterised at the northern end by collapse areas indicative of magma drainage in dykes below the fractures. These fractures are in turn overlain by extensive lava sheets associated with the Quetzalpetlatle corona. The youngest unit in the area appears to be an extensive field of sand dunes.

This experimental geological mapping of a part of Venus using Magellan SAR data demonstrates that it is possible to obtain stratigraphic correlations between different units on a broad scale. Adjacent units can be relatively dated by superposition relations; but where this is not possible cross-cutting relations with fracture belts provide a useful tool for establishing relative ages. As expected, there are some difficulties in delimiting certain units where the surface texture is variable across the unit. Thus lava flows may develop significantly different characteristics as the vent area is approached and mapping of individual flows becomes difficult.