



Figure 6. Birt E as viewed by M³. (a) Reflectance at 0.75 μm, (b) IBD1000, (c) color composite (R = BD950, G = BD1050, B = R1250; see Table 1), (d) reflectance at 2.94 μm, (e) spectra of locations given in Figure 6a, and (f) same spectra after continuum removal. The spectra “DMDs Roi” correspond to the entire area outlined in white, and it corresponds to the extent of the DMDs. The yellow and black lines correspond to boundaries on the mare basalt identified, respectively, in Figures 6b and 6d. In Figure 6f, the 1 and 2 μm band locations of the DMDs Roi are shifted to longer and shorter wavelengths, respectively, and attributed to volcanic glass contribution.

Gustafson *et al.* [2012] also mapped possible DMDs on the western side of the central peak, and the spectrum S-M represents this unit (Figures 5a, 5e, and 5f). This spectrum has a wider, asymmetric 1 μm absorption shifted to longer wavelengths when compared to S-N and S-Se. However, the 2 μm absorption is shifted to a shorter wavelength. This characteristic distinguishes the western unit (represented by S-M) from the northeastern deposits. The characteristics of the absorption bands are consistent with the presence of volcanic glasses that shift the center of the 1 μm absorption to longer wavelengths and shorten the 2 μm absorption [Bell *et al.*, 1976; Gaddis *et al.*, 2003], and specifically more consistent with orange glass. The western unit (S-M) also has a low reflectance at 2.94 μm as seen in Figure 5d. High-resolution NAC images reveal an irregular depression that could be a vent in the western area. However, the extent of the low reflectance is not limited to the possible vent structure only and therefore could be associated with DMDs around the vent.

Thus, the western deposit on the floor of crater Schluter (S-M) shows spectroscopic (i.e., glass signature and low albedo) and morphologic characteristics (i.e., possible vent structure) that make it a likely candidate for a pyroclastic deposit. The mafic mare-like spectral characteristics of the northeastern floor deposits of Schluter are likely to be associated with effusive volcanic deposits with varying mineralogy. However, their origin as pyroclastic cannot be completely discounted. None of the Schluter floor deposits exhibit evidence of the presence of olivine-rich minerals as previously suggested for some lunar DMDs [Hawke *et al.*, 1989].

4.4. Birt E

Birt E is a noncircular feature mapped as a small crater (diameter of 5 km) that has been suggested to be a vent and the source of a small DMD in this area [Gustafson *et al.*, 2012]. The Birt E feature is located in Mare Nubium and at the termination of the Rima Birt I linear rille. Another linear rille runs parallel to and west of Birt E, and this is also mentioned as a potential source for the dark albedo deposits. Among all the possible DMDs