

SAMPLE NUMBER: 563790 and 563791 HAT-2, 142.75 and 156.5m

SUMMARY:

These are both very similar plagioclase+sparsely augite-phyric andesitic lavas that suffered an intense early sericite-pyrite (hematite or magnetite?) alteration event, then a silica alteration episode that produced a false brecciation texture, followed by diffuse carbonate alteration.

THIN SECTION DESCRIPTION:

These are texturally fairly well-preserved plagioclase-phyric andesitic lavas that show in both the core slices and thin section, abundant evidence for false brecciation associated with silicification of the rock. Where best preserved, both are seen to be composed of around 5-8 modal% of totally sericitized plagioclase phenocrysts, mostly less than 1mm long. Very few altered phenocrysts have shapes suggestive of mafic precursors, although a few small chlorite euhedra may have been augite. Small FeTi oxide microphenocrysts are replaced fine-grained aggregates of hematite or magnetite and leucoxene.

The groundmass of both rocks was vitrophyric, in 790 with abundant plagioclase microlites set in subordinate glass that has been thoroughly replaced by sericite, fine, granular magnetite or hematite (after pyrite in places?), and some spotty secondary quartz, and in 791 an originally more glassy groundmass that is now composed of almost opaque devitrified glass. Sample 790 is crosscut by angular fracture fillings and coarse vein networks of very fine-grained, almost chalcedonic secondary silica, that have produced the false brecciation texture so evident in the hand specimen. In places, and more typically in 791, the silica alteration has soaked from the veins into the groundmass of the rock, creating a coarse-grained polygonal silica-rich groundmass. The silicification has been overprinted by diffuse calcite alteration, but the common, disseminated opaques are clearly related to the early sericite alteration event and not the silica- or carbonate alteration.