

PRIMARY AND SECONDARY FEATURES IN THE ANASAGAR GNEISS NEAR
AJMER, AND THEIR IMPLICATION ON THE EVOLUTION OF THE
PROTEROZOIC SOUTH DELHI FOLD BELT, CENTRAL RAJASTHAN

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The Anasagar Gneiss – a typical megacryst-bearing granite gneiss - was syntectonically emplaced during D₁ as a sheet-like body within a supracrustal sequence dominated by quartzite, with subordinate mica schist and discontinuous amphibolite bands. At places, the microcline megacrysts constitute up to 35% by volume of the rocks. The megacrysts are products of slow cooling during late magmatic crystallisation. Parallel alignment of euhedral megacrysts and alternation of megacryst-rich and megacryst-free bands represent magmatic features. The megacrysts are in general recrystallised to aggregates of smaller grains, often retaining their crystal outline. Post-crystallisation deformation has converted the megacrysts to lensoid augen-like objects or thin lenticular bands parallel to the foliation or has disrupted them into fragments. Close to the contact, strong deformation has converted the megacrysts into thin elongated streaks giving rise to a fine-grained streaky banded gneiss. The structural and textural features indicate that the foliation in the gneiss started as a magmatic structure and subsequently acquired the character of a deformational (D₁) planar fabric. This foliation is folded by D₂ and D₃ folds which are also present in the supracrustal envelope. The new information suggests that the Anasagar Granite Gneiss along with its enveloping supracrustals are Pre-Delhi in age, and the D₁ deformation was also Pre-Delhi. The easterly directed movement giving rise to asymmetrical east-vergent folds (D₂), followed by late-stage coaxial upright folds (D₃) belong to the South Delhi orogeny.