

# Aeromagnetic Anomalies Uncover the Precambrian Basement in the Chhattisgarh Basin Area, Central India

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## Abstract

This paper presents aeromagnetic images for the Chhattisgarh basin region, in Central India, to provide a new window on Precambrian basement geology and structure. On the basis of aeromagnetic patterns, the Chhattisgarh basin is sub-divided into a northern low (negative) anomaly zone and a southern high (positive) anomaly zone. The northern portion of the main Chhattisgarh basin has been further divided into two sub-basins, the Hirri sub-basin in the west, and Baradwar sub-basin in the east. A prominent negative anomaly delineates a NW-SE trending greenstone belt separating these sub-basins. Positive magnetic anomalies delineate the extent of the Dongargarh granite and equivalents, while the weak magnetic anomaly in the southeast of the Dongargarh granite and equivalents reflect granulite gneisses of the Eastern Ghat Mobile Belt. By applying the reduced-to-the-equator filter we enhanced the possible magnetic sources and structural lineaments within the Chhattisgarh basin.

A new sketch map of structural elements was then compiled from aeromagnetic interpretation over the Chhattisgarh basin area. It includes possible faults, folds and an inferred lithological boundary.

**Key words:** aeromagnetic image of Central India, geological mapping, sedimentary basin, greenstone belt, structural lineaments, Central India.