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大同一怀安麻粒岩地体的伸展抬升 [点此下载全文](#)

[张家声](#)

国家地震局地质研究所 北京

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摘要:

大同一怀安地区TTG片麻岩和孔兹岩系早期具有互不相同的, 但双彼此相关的构造和演压历史。它们之间的低角度高应变带以正韧性剪切和非共轴变形为特征, 体现了构造接触的性质。构造和岩石学数据表明, 该地体至少在2.5 Ga和1.8 Ga前后分别受到两个麻粒岩相变质事件的影响, 其主要的构造是在M1事件中形成的。

关键词: [麻粒岩](#) [伸展塌陷](#) [拆离带](#) [山西省](#) [地体](#)

EXTENSION AND UPLIFT OF THE DATONG-HUAIAN GRANULITE TERRAIN [Download Fulltext](#)

[Zhang Jisheng](#)

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Abstract:

The tectonic and P-T histories of both TTG gneiss and khondalite series in the Datong-Huaiian area are different but interrelated to each other. A low-angle high strain zone lying between the two rock series is characterized by ductile shearing in a normal sense and noncoaxial deformation, showing a tectonic contact between them. Structural, textural and stratigraphic data indicate that the terrain was affected by two tectono-thermal cycles (C1 and C2) and two corresponding granulite facies events (M1 and M2) about 2500 and 1800 Ma ago. The major structures in the terrain were formed during M1, C1 is manifested by regional crustal compression and thickening in the early stage and subsequent extension and decoupling. In C1 the peak metamorphic conditions were 1.2-1.4 GPa and 800-900 C; while for the allochthonous cover sediments the values were about 0.8 GPa and 800 C and there were developed bedding-parallel foliation and large amounts of S-type granites. The earlier structures in basement and allochthonous cover are products of M1 metamorphic event at different crustal levels. Juxtaposition of basement and cover along a detachment zone occurred at the late stage of C1/M1. The cover sequence in the hanging wall of the detachment was displaced in a lateral sense and syn-D3 structure records cooling rather than decompression. In contrast, the basement in the footwall moved in a vertical sense in response to unloading, and therefore records decompression of 0.4-0.6 GPa and uplift. During C2/M2, peak conditions of about 0.4-0.6 GPa and 650-700 C were reached. This period witnessed the development of discrete, left-lateral strike-slip zones that transect both basement and cover, accompanied by uplift. The low-angle detachment and deduced P-T paths imply that there occurred extensional collapse in the process of isostatic adjustment following crustal thickening.

Keywords: [granulite](#) [extensional collapse](#) [detachment zone](#) [Shanxi Province](#)

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