

Theoretical Insights into Star Formation: from the Early to the Present Day Universe

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Clusters, Associations and the Stellar Mantle

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As a stellar group forms within its parent molecular cloud, new members first appear in the deep interior. Theory suggests, and observations confirm, that these crowded stars continually diffuse outward. I suggest that they also leak out of the cloud, to form an expanding envelope which I call the “stellar mantle.” In a nascent OB association, the mantle remains nested deep inside the Galactic tidal radius. In smaller stellar groups, the tidal force erodes the mantle, and determines whether the group becomes a T association or a gravitationally bound open cluster.

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