

## Carbon Isotopic Anomalies of the Late Cambrian Carbonates of Iran and South Korea.

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Vendian to the Lower Ordovician carbonates in North and Central Iran and the Middle Cambrian to the Upper Ordovician carbonates in South Korea have been examined to establish the Cambrian. Iranian sections are composed of shallow subtidal to supratidal carbonates of stromatolitic dolostone/limestone and occasional marl and shale.

Strong negative excursion ( $\Delta \sim -10\text{‰PDB}$ ) and positive shift ( $\Delta \sim +4\text{‰}$ ) have been observed in the uppermost Vendian and the lowermost Cambrian, respectively (Kimura *et al.*, 1997); the latter of which was considered to reflect the *Cambrian Explosion*.

Another negative excursion ( $\Delta \sim -4\text{‰}$ ) has been recognized in the upper Lower Cambrian (Toyonian) quartz arenite of delta/fan system and a strong positive excursion ( $\Delta \sim +6\text{‰}$ ) in the Eocrinoid-oolite shoal/bank of the Upper Cambrian (~Dresbachian). Facies and environmental analyses suggest that the Toyonian excursion represents a world wide demise of carbonate platforms (*Toyonian Crisis*), whereas the Dresbachian(?) positive excursion is explained as a result of increased bio-diversity and high productivity as documented by dense bioturbation.

Upper Cambrian positive excursion has also been identified in South Korea (Kishima, in prep.) and Great Basin of North America (Brasier *et al.*), suggesting that the excursion was a global event, and the bio-productivity was drastically increased, perhaps greater than *Cambrian Explosion*.