Supplementary Information

Doushantuo-type microfossils from latest Ediacaran phosphorites of northern Mongolia

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Methods

The Khesen fossils were examined in thin-section and by scanning electron microscopy following 20% acetic acid maceration. All materials are deposited in the Yale Peabody Museum of Natural History (YPM). Carbon isotope ratios of micro-drilled carbonate powders were measured following methods described in Macdonald et al. (2009).

Biostratigraphy

Khesen Gol
YPM 536746 and 536749 are at 0 and 3 m respectively in Fig. S1.

Urandush Uul
YPM 536747 and 536748 are at 21 and 22 m respectively in Fig. S1.

	Khesen Gol		**Urandush Uul**	
	YPM 536746	YPM 536749	YPM 536747	YPM 536748
Cyanobacteria				
Obruchevella delicata	R			
Obruchevella magna			R	R
Obruchevella parvissima				R
Obruchevella sp.				R
Siphonophycus spp.	C	C	C	C
?Algae				
Archaeophycus yunnanensis			R	
Acritarchs				
Appendisphaera grandis			R	
Appendisphaera fragilis		R		R
Appendisphaera tenuis			R	
Cavaspina ?*basiconica*			R	
Leiosphaeridia spp.	R	R	C	C
Megasphaera sp.			C	C
Variomargosphaeridium gracile			C	C
Variomargosphaeridium sp.				R

Table S1: Biostratigraphy of the upper Khesen Formation showing reported taxa from the four most diverse samples and their relative abundance within the assemblage. R = rare (isolated individuals, only a few specimens). C = common (10s of individuals). In the case of *Megasphaera* 10s of individuals are reported but only a few are preserved with enough fidelity to confidently interpret internal structures. YPM sample numbers are given for reference.

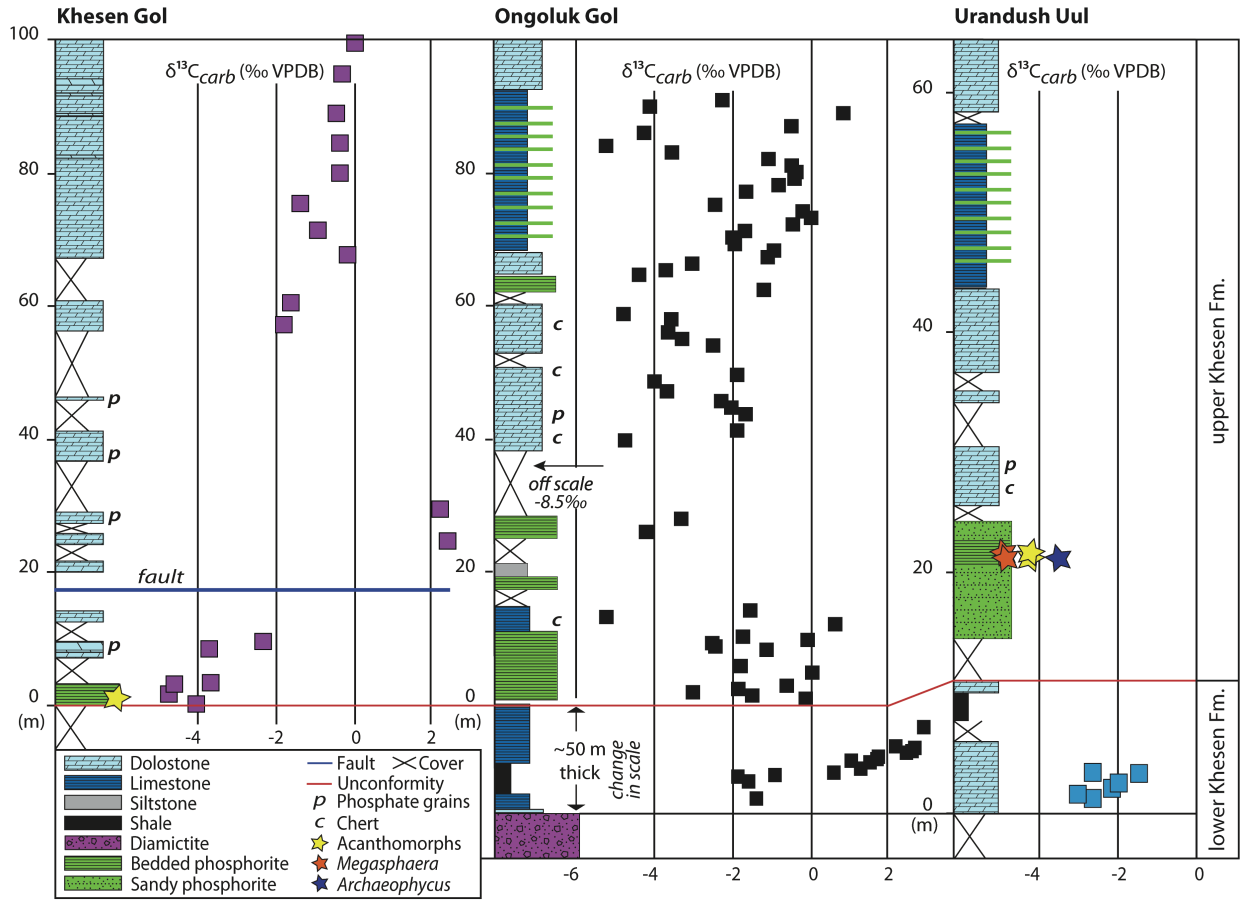

Figure S1: Expanded stratigraphy showing relationships between Khesen Gol, Ongoluk Gol, and Urandush Uul localities. See Figure 1 for locality information.

References

Macdonald, F.A., Jones, D.S., and Schrag, D.P., 2009. Stratigraphic and tectonic implications of a newly discovered glacial diamictite-cap carbonate couplet in southwestern Mongolia: Geology, v. 37, p. 123–126, https://doi.org/10.1130/G24797A.1.