Supplementary Information

Table DR1. Previous palaeontological studies of Sturtian-equivalent, interglacial and Marinoan-equivalent units.

Time Bin	Unit (Group or Basin- Country)	Biota	References
Marinoan Equivalent	Churochnaya Fm. (Laplandian Horizon- Russia)	simple filaments and coccoids	Sergeev et al., 2013
Marinoan Equivalent	Ghadir Manqil Fm (Abu Mahara Group- Oman)	simple filaments	Butterfield and Grotzinger, 2012
Marinoan Equivalent	Ghadir Manqil Fm (Abu Mahara Group- Oman)	24-Isopropylcholestane, biomarker interpreted as evidence of Demospongiae	Love et al., 2009
Interglacial	Ghadir Manqil Fm (Abu Mahara Group- Oman)	24-Isopropylcholestane, biomarker interpreted as evidence of Demospongiae	Love et al., 2009
Interglacial	Trezona Fm (Adelaide Rift Complex- Australia)	weakly calcified structures stromatolites	Maloof et al, 2010 Preiss, 1973
Interglacial	Rasthof Fm (Otavi Group- Namibia)	Agglutinated structures microbialaminites	Bosak et al, 2011a; Bosak et al., 2012 Pruss et al, 2010
Interglacial	Tsagaan Oloom Fm (Dzabkhan Basin -Mongolia)	Agglutinated structures Flask shaped structures	Bosak et al, 2011a Bosak et al., 2011b
Interglacial	Twitya Fm (Windermere Sprgrp- Canada)	Twitya disks- Ediacaran fauna-like macrofossils	Hofmann et al, 1990
Interglacial	Twitya/Keele Fm (Windermere Sprgrp- Canada)	Stromatolites	James et al., 2005
Interglacial	Cheikhia Group (Taoudeni Basin- W. Africa)	Disks- Ediacaran fauna-like macrofossils	Bertrand-Sarfati et al., 1995
Interglacial	Ombaatjie Fm and Auros Fm (Otavi Group- Namibia)	perforate globular structures	Brain et al., 2012
Interglacial	Ombaatjie Fm (Otavi Group- Namibia)	Stromatolites	Hoffman, 2011
Interglacial	Bonahaven Fm (Argyll Group- Scotland)	Stromatolites	Spencer and Spencer, 1972
Interglacial	Russøya Mbr (Polarisbreen Group- Svalbard)	Stromatolites	Hoffman et al., 2012
Interglacial	Etina Fm (Adelaide Rift Complex- Australia)	stromatolites	Preiss, 1973
Interglacial	Brighton Fm (Adelaide Rift Complex- Australia)	stromatolites	Preiss, 1973
Interglacial	Aralka Fm (Ringwood Mbr) (Amadeus Basin- Australia)	stromatolites	Glaessner et al, 1969
Interglacial	Aralka Fm (lower) (Amadeus Basin- Australia)	leiosphaerids, *Sphaerocongregus variabilis*, simple filaments, small fragment of ?process-bearing? Acritarch	Zang and Walter, 1992
Interglacial	Datangpo, Minle Fms (Yangtze Platform- China)	leiosphaerids, *Sphaerocongregus variabilis*, colonial aggregates	Yin, 1990
Interglacial	Serra da Saudade (Bambuí Group- Brazil)	leiosphaerids	Simonetti and Fairchild, 2000
Interglacial	Lagoa do Jacaré (Bambuí Group- Brazil)	leiosphaerids	Simonetti and Fairchild, 2000
Interglacial	Serra de Santa Helena Fm (Bambuí Group- Brazil)	leiosphaerids	Simonetti and Fairchild, 2000
Interglacial	Sete Lagoas Fm (Bambuí Group- Brazil)	columnar,digitate, domical, planar stromatolites leiosphaerids, colonial aggregates, simple filaments	Fairchild et al, 1996
Interglacial	Grasdal Formation (Tanafjord Group- Norway)	Columnar stromatolites leiosphaerids, *Sphaerocongregus variabilis*, rare, small, ?process-bearing? acritarchs, fragments of *Chuaria circularis,* abundant thin filaments	Bertrand-Sarfati and Siedlecka, 1980, Raaben et al., 1995 Vidal, 1981
Interglacial	Dakkovarre Formation (Tanafjord Group- Norway)	leiosphaerids, *Sphaerocongregus variabilis, Chuaria circularis,* small ?process-bearing? Acritarchs, colonial aggregates, thin filaments	Vidal, 1981
Interglacial	Stangenes Formation (Tanafjord Group- Norway)	leiosphaerids, *Sphaerocongregus variabilis*, small ?process-bearing? Acritarchs	Vidal, 1981
Interglacial	Arena Fm* (Tillite Group -Greenland)	leiosphaerids, *Sphaerocongregus variabilis*	Vidal, 1979 Vidal, 1976
Sturtian equivalent	Maikhan Ul Fm (Dzabkhan terrane- Mongolia)	problematic circular structures	Serezhnikova et al., 2014
Sturtian equivalent	Jequitaí Fm (Bambuí Group- Brazil)	planar microbialites leiosphaerids, colonial aggregates, simple filaments	Fairchild et al, 1996
Sturtian equivalent	Ulvesø Fm* (Tillite Group- Greenland)	leiosphaerids, *Sphaerocongregus variabilis*, *Octoedryxium truncatum, Chuaria circularis* (may be reworked)	Vidal, 1979 Vidal, 1976
Sturtian equivalent	Mineral Fork Fm (Wasatch Range-USA)	leiosphaerids, *Sphaerocongregus variabilis*	Knoll et al, 1981
Sturtian equivalent	Pirrilyunka Formation (Central Officer Basin- Australia)	fragments of *Cerebrosphaera buickii* (considered reworked)	Haines et al., 2008
Sturtian equivalent	Chambers Bluff Tillite (Eastern Officer Basin- Australia)	fragments of *Cerebrosphaera buickii* (considered reworked)	Eyles et al., 2007

*Vidal, 1976;1979 described fossils from the "Lower Tillite" and "Inter-tillite Beds", renamed "Ulvesø Fm" and "Arena Fm", respectively (Hambrey and Spencer, 1987).

The Pickelhaube Fm, Port Nolloth Group Namibia (Gaucher et al., 2005) hosts *Sphaerocongregus variabilis* but is not included here due to stratigraphic uncertainty (Macdonald et al., 2010b). Similarly, recent work has reinterpreted the Kingston Peak Fm, Death Valley, USA (Macdonald et al., 2013), thus that microbiota (Corsetti et al., 2003) is omitted here. Serezhnikova et al. (2014) report problematic circular structures from the glacial Maikhan Ul Fm of Monglia; they interpret this unit to be a Marinoan equivalent, but based upon the data presented by Macdonald (2011), this unit is placed here as a Sturtian equivalent.

Table DR2. Complement to text figure 3.

Paleocontinent	Basin/ Group	Unit	Age (nature of constraints)	leiosphaerids present?	# org-walled eukaryote taxa excluding leiosphaerids	VSMs present?	other	References: paleo and age
Australia	Amadeus Basin	Bitter Springs Gillen Mbr	820-810 Ma ($\delta^{13}C$ correlation)	Y	8	N		Zang and Walter, 1992
Australia	Amadeus Basin	Bitter Springs Loves Creek Mbr	810-800 Ma ($\delta^{13}C$ correlation)	Y	0	N		Schopf, 1968
Australia	Amadeus Basin	Areyonga Fm	Sturtian glacial	Y	0	N		this study; Kendall et al., 2006; Li et al., 2013
Australia	Amadeus Basin	Aralka Fm	Sturtian glacial	Y	0	N		this study; Kendall et al., 2006; Li et al., 2013
Australia	Adelaide Rift Complex	Tapley Hill Fm	Sturtian-Marinoan interglacial	Y	1	N		this study; Li et al., 2013
Australia	Adelaide Rift Complex	Brighton Limestone Fm	Sturtian-Marinoan interglacial	Y	0	N		this study
Australia	Smithton Synclinorium Togari Group	lower Black River Dolomite	777-722 Ma (U-Pb zircon, $^{87}Sr/^{86}Sr$, $\delta^{13}C$)	Y	0	Y		Saito et al., 1988; LAR pers. obs.; Calver, 1998,
Australia	Smithton Synclinorium Togari Group	Black River Dolomite Julius River Mbr	Sturtian glacial-equivalent	Y	0	N		this study; Calver, 1998; Li et al., 2013
Australia	Smithton Synclinorium Togari Group	upper Black River Dolomite	Sturtian-Marinoan interglacial	Y	0	N		this study; Calver, 1998, Kendall et al., 2009
North China	southern North China Block Huaibei Group	Gouhou Fm.	820±11–811 Ma (detrital zircons below, $^{87}Sr/^{86}Sr$, $\delta^{13}C$ correlation Bitter Springs anomaly)	Y	7	N		Zang and Walter, 1992; Qian et al., 2009; Xiao et al., 2014
North China	southern North China Block Huaibei Group	Jinshanzhai Fm	820±11–>811 Ma- beneath Gouhou Fm (detrital zircon, $^{87}Sr/^{86}Sr$, $\delta^{13}C$ correlation)	N	4	N		Qian et al., 2009; Xiao et al., 2014
Siberia	Turukhansk region	Miroyedikha Fm	900-800 Ma ($\delta^{13}C$ correlation)	Y	8	N		Jankauskas et al., 1989, Hermann, 1990; Knoll et al., 1995, Bartley et al., 2001
Kazakhstan	Lesser Karatau Malokaroy Series	Chichkan Fm	?-766±7 Ma (U-Pb zircon)	Y	10	Y		Sergeev and Schopf, 2010. Levashova et al., 2011
Congo	Otavi Group	Rasthof Fm	717-635.6± 0.5 Ma (U-Pb zircon, glacial correlation)	N	0	n	agglutinated forms	Bosak et al., 2011a, 2012
Tuva-Mongolia	Dzabkhan terrane	Tsagaan Oloom Fm	715-635 Ma (U-Pb zircon, $^{87}Sr/^{86}Sr$, $\delta^{13}C$)	N	0	n	putative ciliates	Bosak et al., 2011b
São Fancisco Craton	São Fancisco Block	Jequitaí Fm	Sturtian glacial-equivalent	Y	0	n		Fairchild et al., 1996, Uhlein et al., 2011; but see Li et al., 2013
São Fancisco Craton	São Fancisco Block Bambuí Group	Sete Lagoas Fm	740±22 Ma (Pb-Pb isochron; $\delta^{13}C$, Sturtian-Marinoan interglacial correlation)	Y	0	n		Fairchild et al., 1996; Babinski et al., 2007, Misi et al., 2007; but see Li et al., 2013
São Fancisco Craton	São Fancisco Block Bambuí Group	Serra de Santa Helena Fm	Sturtian-Marinoan interglacial	Y	0	n		Simonetti and Fairchild, 2000, Misi et al., 2007
São Fancisco Craton	São Fancisco Block Bambuí Group	Lagoa do Jacaré Fm	Sturtian-Marinoan interglacial	Y	0	n		Simonetti and Fairchild, 2000, Misi et al., 2007
São Fancisco Craton	São Fancisco Block Bambuí Group	Serra da Saudade Fm	Sturtian-Marinoan interglacial	Y	0	n		Simonetti and Fairchild, 2000, Misi et al., 2007
Laurentia	Amundsen Basin Shaler Supergroup	Wynniatt Fm	825-815 Ma ($\delta^{13}C$, $\delta^{18}O$ correlations)	Y	9	n		Hofmann and Rainbird, 1995; Butterfield and Rainbird, 1998; Butterfield 2005a,b; Jones et al., 2010
Laurentia	Mackenzie Mountains Little Dal Group	Rusty Shale Formation	~850 Ma-811 Ma ($\delta^{13}C$ correlation, below Bitter Springs anomaly)	N	2	N		Hofmann, 1985; Macdonald et al., 2010, Macdonald et al., 2012
Laurentia	Mackenzie Mountains Little Dal Group	Basinal and Platformal Assemblage	~850 Ma-811 Ma ($\delta^{13}C$ correlation, below Rusty Shale Fm. and intervening units)	Y	7	N		Hofmann and Aitken, 1979; Hofmann, 1985; Macdonald et al., 2010, Macdonald et al., 2012
Laurentia	Ogilvie Mountains Mackenzie Mountains Supergroup	upper shale of Fifteenmile Group	810-745 Ma (U-Pb zircon)	Y	5	N	scale microfossils	Allison and Awramik, 1989; Cohen and Knoll, 2012; Macdonald et al., 2010
Laurentia	Ogilvie Mountains Windermere Supergroup	Callison Lake Dolostone	~745–716 Ma Re-Os	N	0	Y		Strauss et al., 2012; Macdonald et al., 2010
Laurentia	Chuar Group	Galeros +lower Kwagunt	770-750 Ma (max:detrital zircon, min: interpolation	Y	16	N		Vidal and Ford, 1985; Nagy et al. 2009; SMP pers.obs.; Dehler et al., 2012
Laurentia	Chuar Group	upper Awatubi +Walcott	750-742±6 Ma max: interpolation, min:U-Pb zircon)	Y	1	Y		Vidal and Ford, 1985; Nagy et al. 2009; SMP pers.obs.; Karlstrom et al., 2000
Laurentia	East Greenland+Svalbard Basin Roaldtoppen Group	Hunnberg Fm	820-805 Ma (lithological & $\delta^{13}C$ correlation)	Y	9	N		Knoll, 1984
Laurentia	E.Greenland+Svalbard Basin Roaldtoppen	Rysso Fm	805-740 Ma (lithological & $\delta^{13}C$ correlation)	Y	6	Y		Knoll and Calder, 1983
Laurentia	East Greenland+Svalbard Basin Academikerbreen Group	Svanbergfjellet Fm	~805-~790 Ma ($\delta^{13}C$ correlation)	Y	21	N		Butterfield et al., 1994; Li et al., 2013
Laurentia	East Greenland+Svalbard Basin Academikerbreen Group	DrakenFm	~790-~778 Ma ($\delta^{13}C$ correlation)	Y	7	Y		Knoll et al., 1991
Laurentia	East Greenland+Svalbard Basin Academikerbreen Group	Backlundtoppen Fm	~778-~740 Ma ($\delta^{13}C$ correlation)	Y	0	Y		Knoll et al., 1989; Hoffman et al., 2012
Laurentia	East Greenland+Svalbard Basin Polarisbreen Group	Russoya Mbr	~740-~719 Ma ($\delta^{13}C$ correlation)	Y	0	N		LAR pers obs.; Hoffman et al., 2012
Laurentia	East Greenland+Svalbard Basin Polarisbreen Group	Macdonldryggen Mbr	Sturtian-Marinoan interglacial	Y	0	N		this study; Hoffman et al., 2012; Li et al., 2013
Laurentia	E.Greenland+Svalbard Basin Eleonore Bay Supergroup	Eleonore Bay Grp Multicolor series	820-800 Ma (regional correlation with Svalbard)	Y	3	N		Vidal, 1976b; Vidal, 1979; Hoffman et al., 2012
Laurentia	E.Greenland+Svalbard Basin Eleonore Bay Supergroup	Eleonore Bay Grp Lower Limestone	800-780 Ma (regional correlation with Svalbard)	Y	3	Y		Vidal, 1976b; Vidal, 1979; Hoffman et al., 2012
Laurentia	E.Greenland+Svalbard Basin Eleonore Bay Supergroup	Eleonore Bay Grp Upper Limestone	780-717 Ma (regional correlation with Svalbard)	Y	2	Y		Vidal 1976b; Vidal, 1979; Hoffman et al., 2012
Laurentia	E.Greenland+Svalbard Basin Tillite Group	Ulveso Fm	Sturtian glacial-equivalent	Y	1	N		Vidal, 1979; Hoffman et al., 2012; Li et al., 2013
Laurentia	E.Greenland+Svalbard Basin Tillite Group	Arena Fm	Sturtian-Marinoan interglacial	Y	0	N		Vidal, 1979; Hoffman et al., 2012; Li et al., 2013

Methods

Samples were processed by standard hydrofluoric maceration by Waanders Palynology Consulting and strewn slides were studied by transmitted light microscopy using Zeiss Axioskop 40. The abundance of organic-walled microfossils in these samples was low as compared to that of pre-Sturtian samples with similar lithology that have been processed in the same lab by the same methods (e.g. upper Chuar Group, Svanbergfjellet Formation, Bitter Springs Formation of BR05DD01 drillcore and Alinya Formation of Giles-1 drillcore).

Eukaryotic diversity assessments in text figure 3 are based on the first and second authors' estimates of within-assemblage taxonomic diversity based upon published synonymies and do not necessarily reflect the estimates given in the original works. As the genus concept is of dubious use in acritarch studies, these counts were based on occurrence of species. Forms considered by the present authors to be pseudofossils or taphonomic variants were not counted.

Text Figure 2 cores and depths: Wallara-1: **a** & **g**- 1411.2m, **c**-1395.9m, **j**-1367m, **q**-1293.9m **p**-1282.4m; BR05DD01: **b**, **h**, **d**-484.5m, **i**-531.5m, **e**-493.6m; Forest-1: **f**- 880.75m; SCYW-79-1a: **k**-1350.76m, **l**- 1238.7m, **m**- 1225.26m, **n** & **t**- 1201.32m, **o**-1266.74m, **v**, **r**, **s**-1254.9m, **u**-1298.81m.

Blinman-2 Discussion

In addition to samples discussed in the text, fourteen samples of Blinman-2 drill core (Fig DR1) of Adelaide Rift Complex were studied. All samples were found to be barren of fossils. Because a diagenetic cause of the absence of fossils cannot be ruled out, these data are not included in the main body of the study. These data are presented here in anticipation of future use and in the interest of publishing negative results to reduce duplication of efforts.

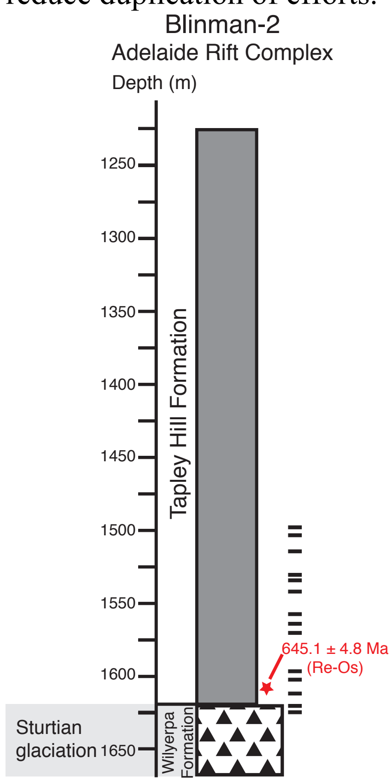

Figure DR1. Stratigraphic Column of Blinman- 2 drill core. Modified from Gorjan et al., 2000 and Kendall et al., 2006. Re-Os date from Kendall et al., 2006.

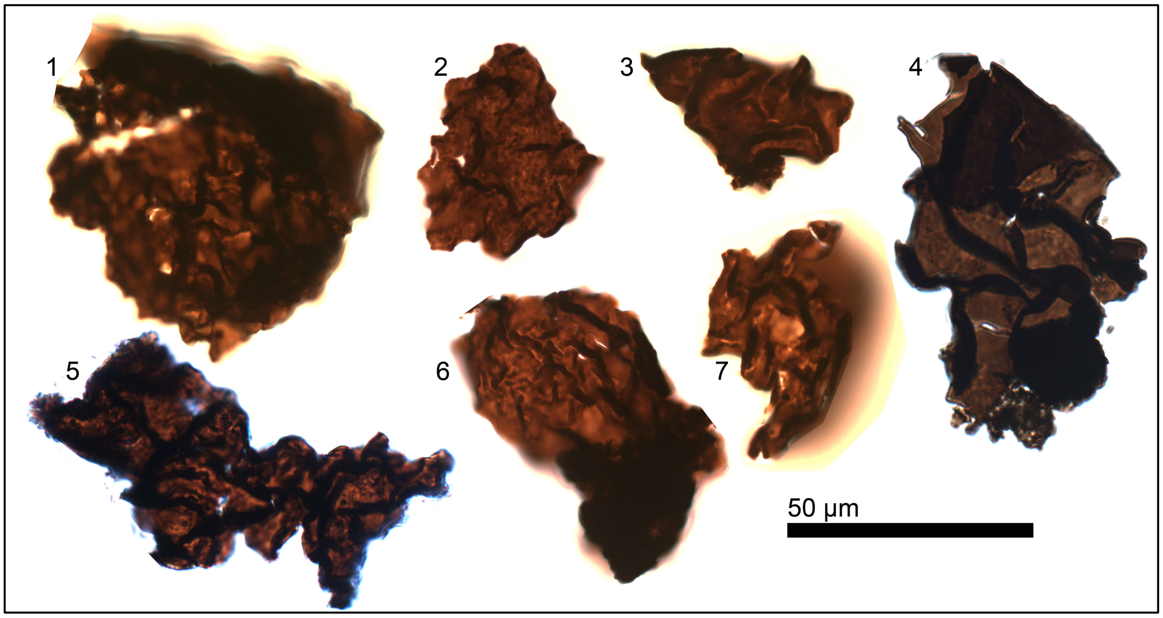

Figure DR2. Recovered fragments of *Cerebrosphaera buickii*. Due to poor quality, regarded as having been reworked. Cores and depths: **1–3**, **6–7** BR05DD01, 517.16 m, **4–5** Wallara-1, 1354.9 m.

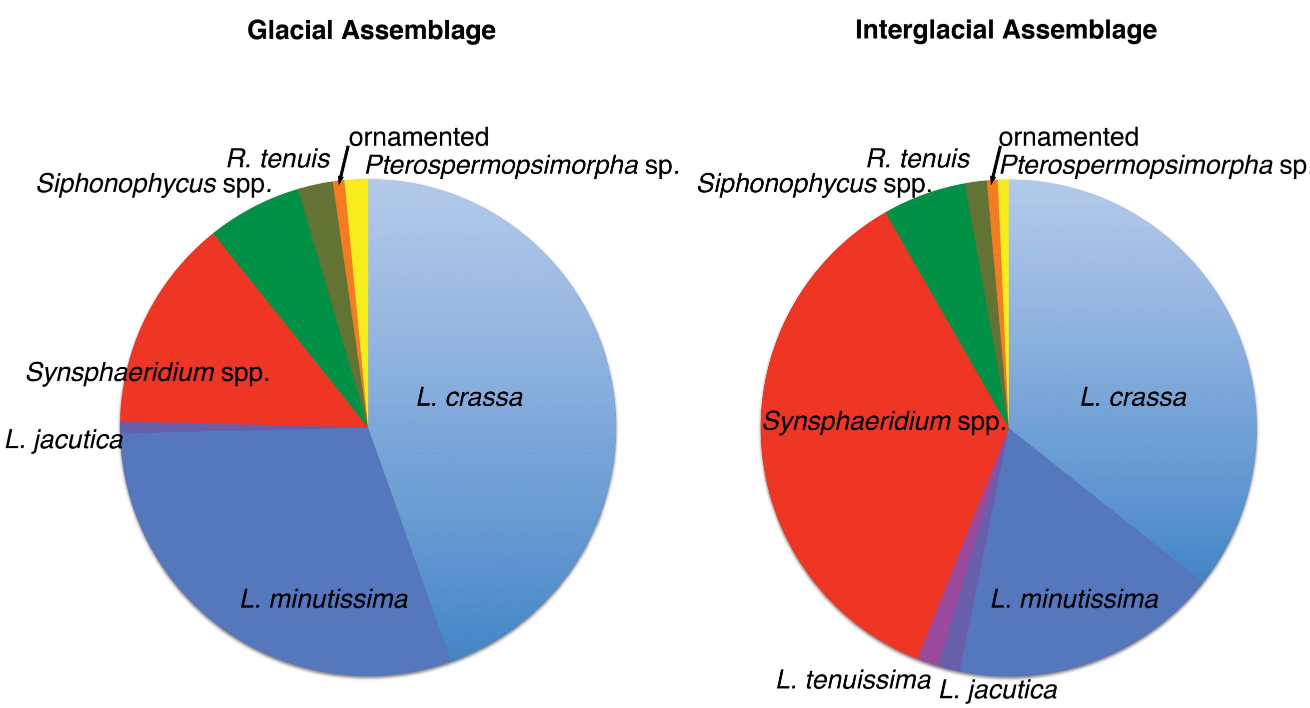

Figure DR3. Pie charts indicating relative contributions from various taxa.

Table DR3. Fossil counts for glacial and interglacial units discussed in text. Top-most table summarizes all samples from all units as divided by glacial or interglacial unit. Subsequent

		samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	*L. minutissima*	*L. crassa*	*L. jacutica*	*L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	*Rugosoopsis* sp.	ornamented acritarchs	*Pterospermopsimorpha* sp.	*C. buickii**
Total Interglacial (68 samples)		11	9	277	2	48	98	4	4	98	15	4	2	2	0
Total Synglacial (21 samples)		4	2	141	11	39	58	1	0	18	8	3	1	2	7

* *C. buickii* specimens occur as fragments and are interpreted to be reworked from pre-Sturtian sediments (see text). They are thus not included in total specimen counts (N)

Forest- 1 drill core

meterage	Unit Name	lithology	samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	*L. minutissima*	*L. crassa*	*L. jacutica*	*L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	*Rugosoopsis* sp.	ornamented acritarch	*Pterospermopsimorpha* sp.	*C. buickii**
816.4	Upper Black River Dolomite	black, fine-grained, pyritic	x													
827.1	Upper Black River Dolomite	black, fine-grained			5		3	2								
834.9	Upper Black River Dolomite	dark grey, fine-grained			4		3			1						
850.9	Julius River Member	black, fine-grained matrix mm to 1cm clasts	x													
880.75	Julius River Member	black, fine-grained			9		9									
886.3	Julius River Member	dark grey, fine-grained			1	1										
902.3	Julius River Member	dark grey, fine-grained matrix				1										
907.1	Julius River Member	dark grey, fine-grained matrix	x													
914.9	Julius River Member	dark grey, fine-grained matrix with ~3mm clasts		x												
933.9	Julius River Member	black matrix	x													
968.35	Julius River Member	black matrix			10	9									1	

BR05DD01 drill core

meterage	Unit Name	lithology	samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	*L. minutissima*	*L. crassa*	*L. jacutica*	*L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	*Rugosoopsis* sp.	ornamented acritarch	*Pterospermopsimorpha* sp.	*C. buickii**
484.5	Areyonga Formation	dark grey, fine-grained matrix			22		8	5			4	5				
489.4	Areyonga Formation	dark grey, fine-grained matrix			3		2					1				
493.6	Areyonga Formation	dark grey, fine-grained matrix			4			4								
517.16	Areyonga Formation	dark grey, fine-grained matrix			18		6	10	1		1					5
531.5	Areyonga Formation	dark grey-brown, fine-grained matrix			5		3	2								
532.25	Areyonga Formation	light grey-green, fine-grained matrix			6		3	2			1					

Wallara-1 drill core

meterage	Unit Name	lithology	samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	*L. minutissima*	*L. crassa*	*L. jacutica*	*L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	*Rugosoopsis* sp.	ornamented acritarch	*Pterospermopsimorpha* sp.	*C. buickii**
1281.2	Aralka Formation	dark grey, fine-grained, blocky			3		2	1								
1282.4	Aralka Formation	dark grey, fine-grained, shaley			9		1	2			6					
1283.8	Aralka Formation	medium to dark grey, blocky	x													
1284.4	Aralka Formation	dark grey, fine-grained, blocky			1			1								
1286.4	Aralka Formation	dark grey, fine-grained, blocky			4			2		2						
1287.9	Aralka Formation	dark grey, fine-grained, blocky			1			1								
1289.9	Aralka Formation	dark grey, fine-grained			1		1									
1292	Aralka Formation	dark grey, fine-grained			3		1	2								
1293.9	Aralka Formation	dark grey, fine-grained, blocky			3		2							1		
1294.5	Aralka Formation	dark grey, fine-grained	x													
1296.4	Aralka Formation	dark grey, fine-grained, blocky			1						1					
1298.5	Aralka Formation	dark grey, fine-grained, blocky			20		5	15								
1300.4	Aralka Formation	dark grey, fine-grained, blocky			3			1			2					
1301.9	Aralka Formation	dark grey, fine-grained			4		1	2			1					
1304.3	Aralka Formation	black, fine-grained, shaley			10		1	3			6					
1306.2	Aralka Formation	dark grey, fine-grained			2			1	1							
1354.9	Areyonga Formation	medium grey, silty matrix			18		1	10			4				1	2
1367	Areyonga Formation	medium grey, silty matrix			20		3	12				2	3			
1376.8	Areyonga Formation	light grey, fine-grained		x												
1395.9	Areyonga Formation	red-grey fine-grained matrix			6			2			3			1		
1407.5	Areyonga Formation	medium to dark grey, fine-grained matrix			3			2			1					
1411.2	Areyonga Formation	medium-grey, fine-grained matrix			17		4	9			4					
1422.6	Areyonga Formation	medium-grey, fine-grained matrix	x													

Macdonaldryggen Member outcrop samples

sample number	lithology	samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	leiosphaerids: *L. minutissima*	leiosphaerids: *L. crassa*	leiosphaerids: *L. jacutica*	leiosphaerids: *L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	filaments: *Rugosoopsis* sp.	ornamented acritarch	*Pterospermopsimorpha* *sp.*	*C. buickii**
G435.25	medium grey, fine-grained			1						1					
G435.35	dark grey, fine-grained	x													
G435.45	dark grey, fine-grained			2						1	1				
G435.56	dark grey, fine-grained, shaley			1						1					
G435.66	dark grey, fine-grained, shaley	x													
G435.76	dark grey, fine-grained	x													
G435.79.5	dark grey, fine-grained	x													
MacG 22-4-0.5m	medium grey, fine-grained, blocky			3	1	1	1								
MacG 22-4-2.15m	dark grey, fine-grained			1	1										
MacG 22-4-3m	medium grey, fine-grained		x												
MacG 22-4-10.2m	medium grey, fine-grained	x													
MacG 22-4-15.2m	dark grey, fine-grained, blocky			1		1									
MacG 22-4-22.5m	medium grey, fine-grained	x													
MacG 22-4-28m	medium grey, fine-grained, blocky	x													

SCYW-79-1a drill core

meterage	Unit Name	lithology	samples barren	fragments only	N	leiosphaerids: *Leiosphaeridia* sp.	leiosphaerids: *L. minutissima*	leiosphaerids: *L. crassa*	leiosphaerids: *L. jacutica*	leiosphaerids: *L. tenuissima*	*Synsphaeridium* spp.	filaments: *Siphophycus* sp.	filaments: *Rugosoopsis* sp.	ornamented acritarch	*Pterospermopsimorpha* *sp.*	*C. buickii**
1172.67	Brighton Limestone	light to medium grey, fine-grained			1							1				
1176.41	Brighton Limestone	medium grey fine-grained, shaley			1		1					1				
1182.24	Brighton Limestone	light to medium grey, fine-grained		x												
1191.42	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1194.42	Tapley Hill Fm	medium grey fine-grained, shaley			12		1	2			8	1				
1201.32	Tapley Hill Fm	medium grey fine-grained, shaley			23		6	7			5	2	2		1	
1202.68	Tapley Hill Fm	medium grey fine-grained, shaley			4			2			2					
1205.13	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1207.16	Tapley Hill Fm	medium grey fine-grained, shaley			1					1						
1215.88	Tapley Hill Fm	dark grey, fine-grained, shaley			1			1								
1218.1	Tapley Hill Fm	dark grey, fine-grained, shaley			1						1					
1225.26	Tapley Hill Fm	dark grey, fine-grained, shaley			32		3	12			14	3				
1226.13	Tapley Hill Fm	dark grey, fine-grained			1			1								
1230.73	Tapley Hill Fm	dark grey, fine-grained, shaley			1			1								
1237.3	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1238.7	Tapley Hill Fm	dark grey, fine-grained, shaley			28		8	4			12	2	2			
1239.4	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1247.7	Tapley Hill Fm	medium grey fine-grained, shaley			1			1								
1249.86	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1254.9	Tapley Hill Fm	medium to dark, fine-grained, shaley			13		2	3			7			1		
1256.9	Tapley Hill Fm	medium to dark, fine-grained, shaley		x												
1260.69	Tapley Hill Fm	dark grey, fine-grained, shaley			2		1	1								
1266.74	Tapley Hill Fm	dark grey, fine-grained, shaley			7			3			3				1	
1279.74	Tapley Hill Fm	medium grey fine-grained, shaley		x												
1289.73	Tapley Hill Fm	medium grey fine-grained, shaley			2			2								
1298.81	Tapley Hill Fm	dark grey, fine-grained, shaley			9			5	1		3					
1306.17	Tapley Hill Fm	dark grey, fine-grained, shaley			1		1									
1314.87	Tapley Hill Fm	dark grey, fine-grained, shaley			5			4			1					
1317.18	Tapley Hill Fm	dark grey, fine-grained, shaley			1			1								
1323.85	Tapley Hill Fm	dark grey, fine-grained, shaley	x													
1338.78	Tapley Hill Fm	dark grey, fine-grained			12		1	1	2		7	1				
1341.78	Tapley Hill Fm	dark grey, fine-grained, shaley			6			4			2					
1350.76	Tapley Hill Fm	dark grey, fine-grained, shaley			12			4			7	1				
1357.3	Tapley Hill Fm	dark grey, fine-grained, shaley			10		1	2			5	2				
1358.69	Tapley Hill Fm	dark grey, fine-grained, shaley			6		1	3			2					

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