DR2004166

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Tables and Figures for electronic repository

Table 1. Iridium contents of P-Tr samples

Val Badia	Ir (ppt)
S0	242 ± 30
SU 0-4	30 ± 11
SU 164	65 ± 16
SD 55	21 ± 9
SD 105	105 ± 21
Gartnerkofel	
#116	133 ± 23
#116a	145 ± 12
#117S	216 ±32
#118	109 ± 16
#118a	87 ± 15
#118S	97 ± 19
#119	155 ± 24
#119a	110 ± 21
#195	65 ± 16
#197	75 ± 13

Note: see Figs. 3 and 4 for sample placement.

Table 2. Abundances of Re, Os, Ir, Ru, Pd, and Pt, as well as measured and intial $^{187}Os/^{188}Os$ in selectedsamples from the Gartnerkofel and Val Badia P/Tr boundary sections. Intial ratios were calculated with a decay constant of 1.666 $*10^{-11}$ yr-1 (Smoliar et al., 1996) and an age of 251 Myr.

Sample	Depth (m)	$^{187}Os/^{188}Os$ measured	$^{187}Os/^{188}Os$ at 251Ma	Re ng/g	Os pg/g	Ir pg/g	Ru ng/g	Pt ng/g	Pd ng/g
Gartnerkofel									
116	185.51	2.171±0.019	0.445	1.27	19	6	15.4	0.8	
117S	185.57	0.954±0.027	Negative	33.57	175	205	61.1	36.1	0.71
119	185.96	0.935±0.010	0.581	0.34	22	6	11.9	0.03	
Val Badia									
SU0-4		21.51±0.16	5.25	18.18	86		3.7		
S 0		30.71±0.19	20.71	76.28	1470	6	3.8	0.27	
SD 55		19.09±0.20	8.69	3.08	21		6.0		
SD 105		4.94±0.04	4.33	6.04	324		114.6	0.23	

Table 3. Helium isotope concentrations and ratios for the Gartnerkofel samples.

Sample	**Meters**	**^{3}He (pcc/g)**	**^{4}He (ncc/g)**	**^{3}He/^{4}He (x10^{-8})**
191	221.01	0.0095	765.38	1.24
193	222.2	0.1047	3985.54	2.63
194	222.35	ND	90.78	< 0.72
195	223.94	0.0026	49.48	5.22
197	225.4	0.0040	339.58	1.19
198	226	0.0018	291.76	0.62
199	227.45	0.0012	183.93	0.63
202	229.65	0.0040	181.19	2.23
203	229.8	0.0125	723.41	1.73
206	231.25	0.0040	59.58	6.79
207	231.37	0.0010	21.29	4.89
209	233.08	0.0121	803.54	1.50
210	233.6	0.0035	90.03	3.91
211	235.25	0.0038	82.50	4.57
213	236.65	0.0026	113.57	2.29
214	236.76	ND	11.13	< 3.5
215	237.84	ND	81.92	<0.80
217	240.9	ND	23.91	<2.72

Method: Briefly, ~1 g of rock was pulverized and decarbonated in 10% acetic acid for several hours. The residue was centrifuged, rinsed in deionized water, re-centrifuged, and transferred quantitatively to a tin foil package. The package was then fused under vacuum in a double-walled resistance furnace. Evolved He was separated from other gases using a combination of chemical getters and cryogenic purification, and analyzed on a MAP 215-50 mass spectrometer. He furnace blanks averaged 0.1 x 10^{-9} cc STP of ^{4}He and 0.5 x 10^{-15} cc STP of ^{3}He. The ^{4}He blank was never more than 1% of the observed signal from the sample, but in most cases the blank was a very large fraction (up to 10s of %) of the measured ^{3}He signal. As a result, in all cases the ^{3}He concentrations are highly uncertain. To provide a firm upper limit on the ^{3}He and ^{3}He/^{4}He ratios in these samples we have *not* made a blank correction.

Figure DR1. Paleogeographic reconstruction of setting of study area (see Sephton et al., 2002, for details).

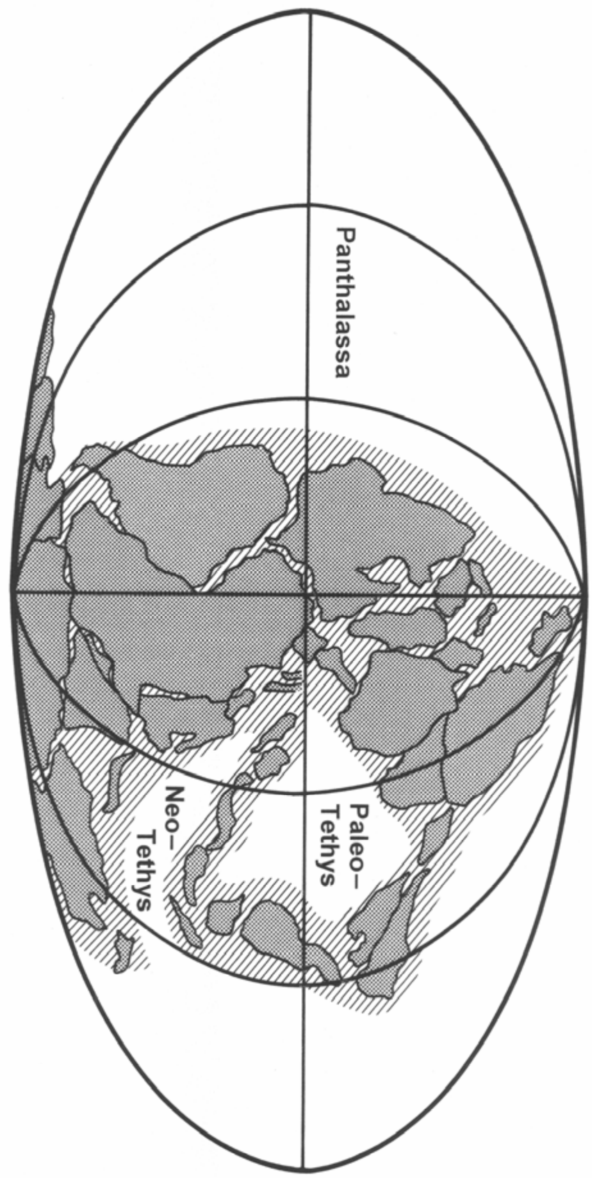
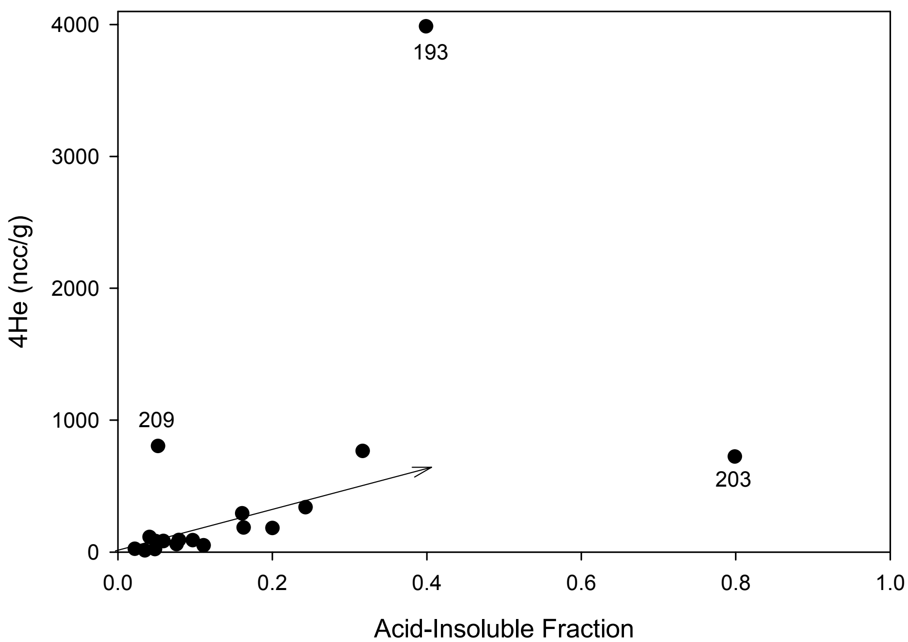
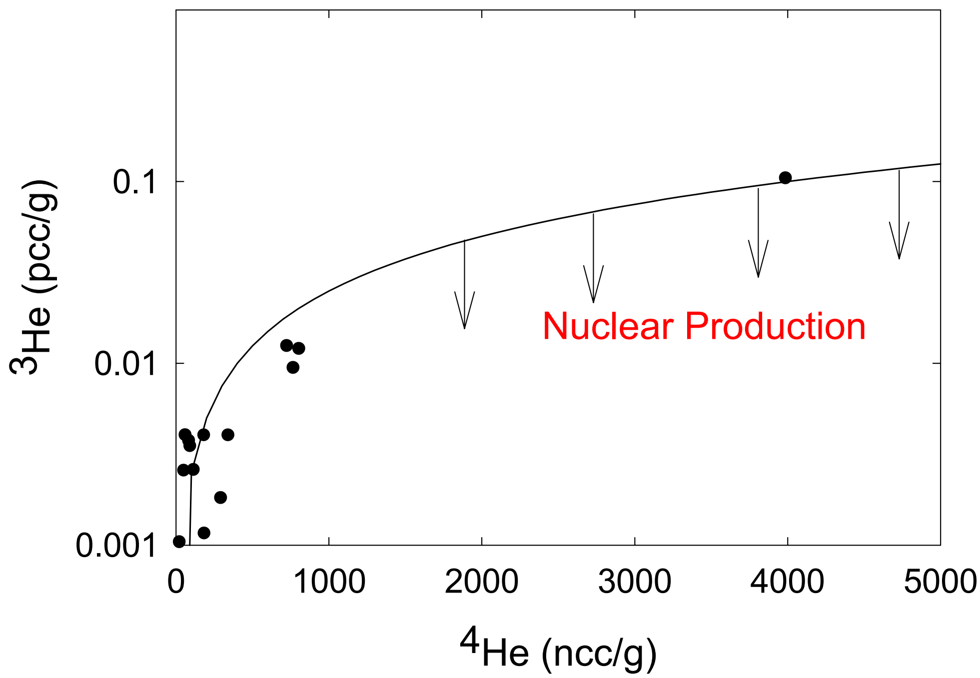


Fig. DR2 (A) Correlation between ^{4}He content and the fraction of acid-insoluble residue in the sample. (B) ^{3}He abundances as produced from natural neutron reactions on ^{6}Li. See text for details.

A



B



Nuclear Production
0.1
0.01
0.001
0
1000
2000
3000
4000
5000
3He (pcc/g)
4He (ncc/g)