ARGONAUT - laboratory / Salzburg

sample field number	ALT-53B		material:	Polyhalit
project description	FWF P22,728		grain size:	200-250 µm
number of measurement	09s0698		number:	5
number of irradiation	25-142		notes:	Altaussee mine
J-value of irradiation	0,007890	0,000019	(+/- 1sigma)	
duration of irradiation [hr]	16,0			
year of irradiation	2008			
julian day of irradiation	346			

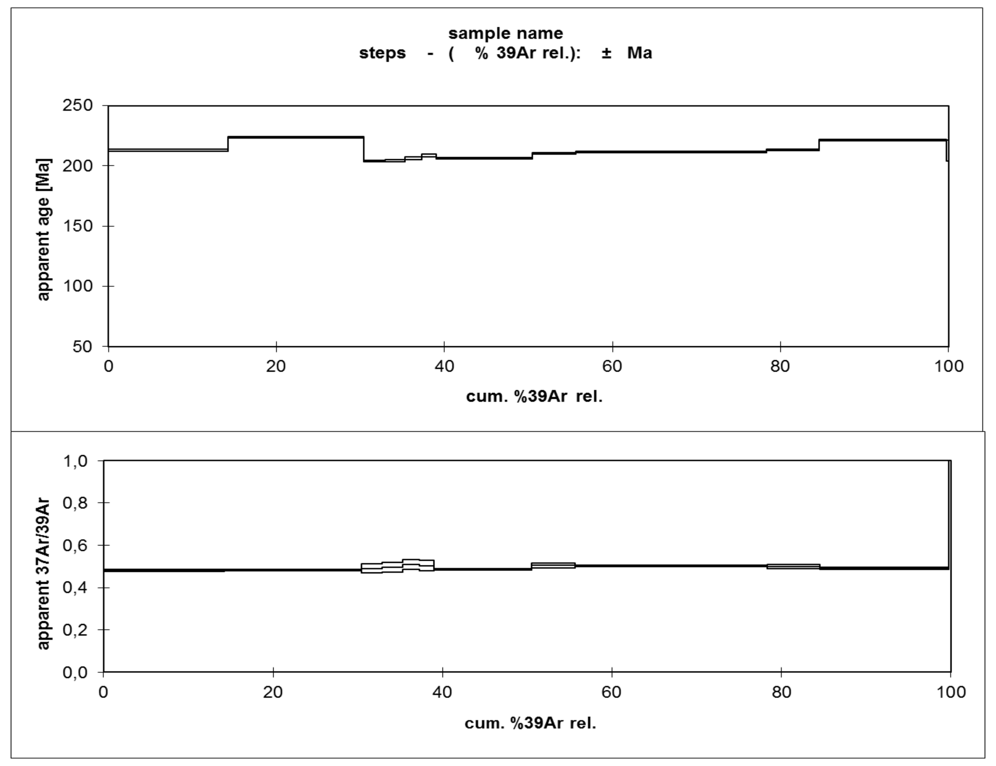
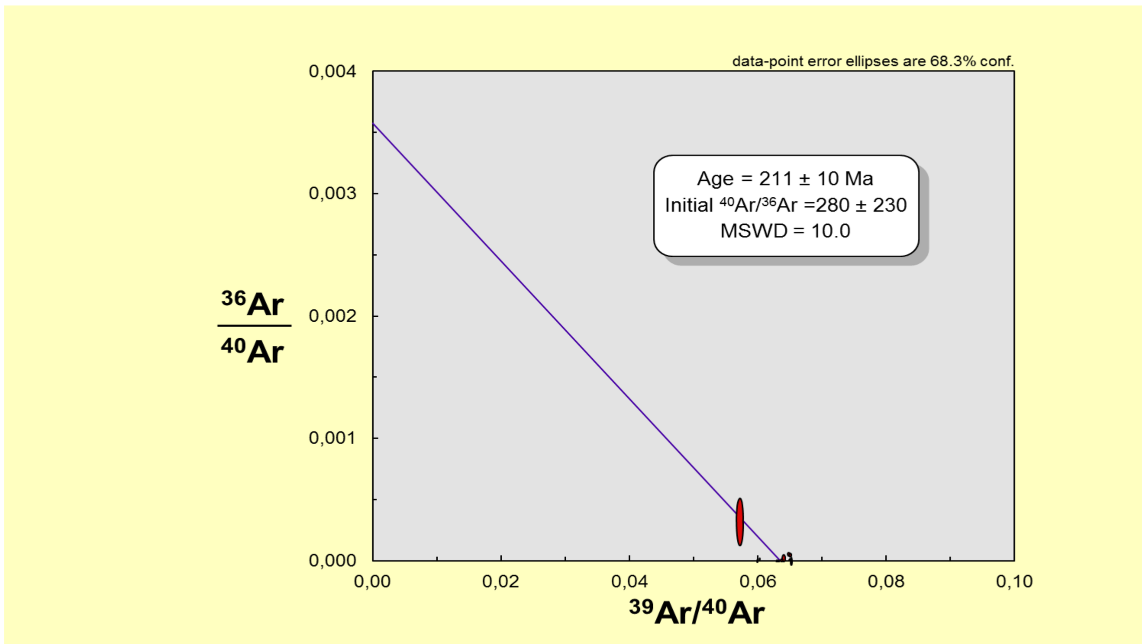
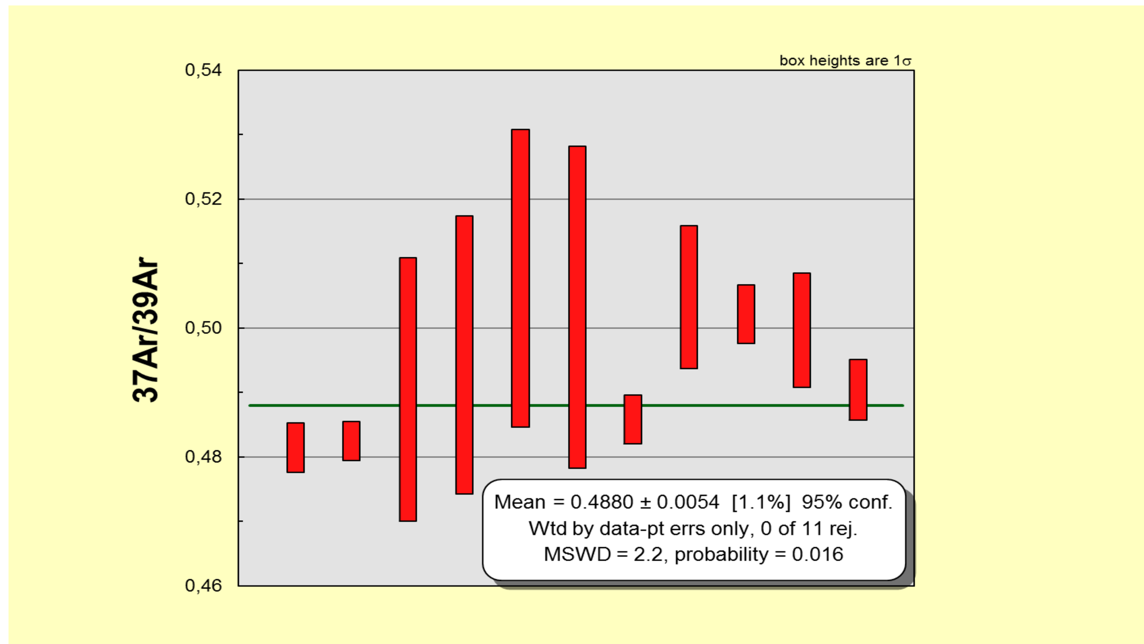
				+/- 1sigma	
conversion from [V] to [cps] by:		6E+07			
composition of atmospheric argon:	(40Ar/36Ar)atm.	=	295,5		(Steiger & Jäger 1977)
half-life of 37Ar [d]		=	35,1	0,1	(Stoenner et al. 1965)
decay constant of 37Ar [dE-01]		=	1,975E-02		(Stoenner et al. 1965)
decay constant of 39Ar [dE-1]		=	7,064E-06		(Stoenner et al. 1965)
decay constant of 40K [aE-01]		=	5,543E-10	1,000E-12	(Steiger & Jäger 1977)
correction for Ca-derived Ar:	(36Ar/37Ar)Ca	=	2,2500E-04		Measured
correction for Ca-derived Ar:	(39Ar/37Ar)Ca	=	6,1400E-04		Measured
correction for K-derived Ar:	(40Ar/39Ar)K	=	2,6600E-02		Measured
correction for K-derived Ar:	(38Ar/39Ar)K	=	1,1700E-02		Measured

INPUT:
(blank-corrected intensities)

	36Ar	+/-[%]	37Ar	+/-[%]	38Ar	+/-[%]	39Ar	+/-[%]	40Ar	+/-[%]	date of measurement: year	j-day	days elapsed	post-irrad. 37Ar decay factor	number of steps	mean of dec.37Ar corr.factor
09b0697b	2,85828E-06	2,3833	1,10824E-06	2,2314	1,54415E-06	3,3301	3,24356E-06	1,4901	8,40299E-04	0,0662	2009	184			12	6,553E+01
a 3.6%	3,07128E-06	3,6481	1,71145E-05	0,6999	2,22771E-05	0,7059	1,84611E-03	0,2295	3,01301E-02	0,2142	2009	184	203	5,544E+01		
09b0698a	2,05565E-06	12,1316	1,18275E-06	5,0393	1,54558E-06	5,2107	4,38594E-06	3,8014	7,61504E-04	0,1093	2009	184				
c 3.8%	2,23567E-06	1,5764	1,94873E-05	0,4930	2,57190E-05	0,8462	2,10740E-03	0,0812	3,59946E-02	0,0513	2009	184	203	5,544E+01		
09b0784a	7,47035E-07	4,3050	9,50260E-07	6,1927	9,99450E-07	5,2220	2,38011E-06	2,9028	1,44933E-04	0,3476	2009	194				
d 3.8%	1,02506E-06	2,7859	3,30312E-06	2,3650	4,66432E-06	1,8355	3,26379E-04	0,1599	5,13963E-03	0,0416	2009	194	213	6,755E+01		
	7,47035E-07	4,3050	9,50260E-07	6,1927	9,99450E-07	5,2220	2,38011E-06	2,9028	1,44933E-04	0,3476	2009	194				
e 3.9%	1,05907E-06	3,0415	3,23760E-06	2,4608	4,33777E-06	2,8767	3,13943E-04	0,2087	4,96823E-03	0,0660	2009	194	213	6,755E+01		
09b0698b	9,01299E-07	6,0162	9,96790E-07	2,8399	1,09079E-06	5,9709	2,90072E-06	2,6086	1,78607E-04	0,2741	2009	194				
f 4.0%	9,27435E-07	6,2101	2,95880E-06	2,8536	3,90140E-06	2,4212	2,63891E-04	0,1370	4,19267E-03	0,0995	2009	194	213	6,755E+01		
	9,01299E-07	6,0162	9,96790E-07	2,8399	1,09079E-06	5,9709	2,90072E-06	2,6086	1,78607E-04	0,2741	2009	194				
g 4.1%	1,00346E-06	3,5412	2,63047E-06	2,8810	3,47257E-06	2,7099	2,22145E-04	0,2803	3,61176E-03	0,0911	2009	194	213	6,755E+01		
	9,01299E-07	6,0162	9,96790E-07	2,8399	1,09079E-06	5,9709	2,90072E-06	2,6086	1,78607E-04	0,2741	2009	194				
h 4.3 %	1,35719E-06	3,9201	1,17189E-05	0,6693	1,75894E-05	0,8710	1,49346E-03	0,0825	2,31845E-02	0,0392	2009	194	213	6,755E+01		
	9,01299E-07	6,0162	9,96790E-07	2,8399	1,09079E-06	5,9709	2,90072E-06	2,6086	1,78607E-04	0,2741	2009	194				
i 4.5 %	1,04758E-06	4,5074	6,00244E-06	1,7526	8,35187E-06	1,9857	6,72589E-04	0,1593	1,07158E-02	0,0587	2009	194	213	6,755E+01		
09b0790a	8,79378E-07	5,2619	1,03446E-06	3,5654	1,06252E-06	6,3636	1,75101E-06	3,6253	1,61659E-04	0,2903	2009	194				
j 4.7%	1,28168E-06	2,7843	2,29232E-05	0,8445	3,39491E-05	0,7940	2,94561E-03	0,0895	4,67206E-02	0,0632	2009	194	213	6,755E+01		
	8,79378E-07	5,2619	1,03446E-06	3,5654	1,06252E-06	6,3636	1,75101E-06	3,6253	1,61659E-04	0,2903	2009	194				
k 4.9%	9,66350E-07	3,0651	7,01687E-06	1,4193	9,54823E-06	1,6032	8,10325E-04	0,1502	1,30471E-02	0,0478	2009	194	213	6,755E+01		
	8,79378E-07	5,2619	1,03446E-06	3,5654	1,06252E-06	6,3636	1,75101E-06	3,6253	1,61659E-04	0,2903	2009	194				
l 5.1%	1,65123E-06	3,9936	1,53630E-05	0,8600	2,33286E-05	0,9514	1,97494E-03	0,0781	3,30049E-02	0,0538	2009	194	213	6,755E+01		
	8,79378E-07	5,2619	1,03446E-06	3,5654	1,06252E-06	6,3636	1,75101E-06	3,6253	1,61659E-04	0,2903	2009	194				
m 5.3%	1,04981E-06	4,1068	1,82622E-06	2,3452	1,57975E-06	3,9617	3,00727E-05	0,3974	6,57867E-04	0,1854	2009	194	213	6,755E+01		

blank- and background-corrected intensities and absolute errors (1-sigma abs.):

	36Ar	+/-	37Ar	+/-	38Ar	+/-	39Ar	+/-	40Ar	+/-	%39Ar	cum%39Ar	%40Ar*
a 3.6%	1,32959E+01	8,19E+00	9,99142E+02	7,63E+00	1,29419E+03	1,03E+01	1,15035E+05	2,64E+02	1,82833E+06	4,03E+03	14,20	14,20	99,99
c 3.8%	1,12372E+01	1,57E+01	1,14261E+03	7,06E+00	1,50895E+03	1,45E+01	1,31274E+05	1,07E+02	2,19932E+06	1,15E+03	16,21	30,41	100,04
d 3.8%	1,73549E+01	2,68E+00	1,46870E+02	6,11E+00	2,28768E+02	6,26E+00	2,02246E+04	3,29E+01	3,11779E+05	1,37E+02	2,50	32,91	98,56
e 3.9%	1,94778E+01	2,84E+00	1,42780E+02	6,18E+00	2,08385E+02	8,44E+00	1,94484E+04	4,11E+01	3,01080E+05	2,07E+02	2,40	35,31	98,30
f 4.0%	1,63146E+00	4,94E+00	1,22473E+02	5,56E+00	1,75444E+02	7,16E+00	1,62915E+04	2,31E+01	2,50566E+05	2,62E+02	2,01	37,32	100,03
g 4.1%	6,37709E+00	4,05E+00	1,01978E+02	5,05E+00	1,48675E+02	7,14E+00	1,36857E+04	3,92E+01	2,14304E+05	2,08E+02	1,69	39,01	99,33
h 4.3 %	2,84576E+01	4,74E+00	6,69295E+02	5,21E+00	1,02988E+03	1,04E+01	9,30437E+04	7,71E+01	1,43607E+06	5,68E+02	11,49	50,50	99,62
i 4.5 %	9,13115E+00	4,49E+00	3,12463E+02	6,80E+00	4,53251E+02	1,11E+01	4,18033E+04	6,70E+01	6,57752E+05	3,94E+02	5,16	55,66	99,80
j 4.7%	2,51125E+01	3,65E+00	1,36634E+03	1,23E+01	2,05285E+03	1,73E+01	1,83761E+05	1,65E+02	2,90630E+06	1,84E+03	22,69	78,34	99,96
k 4.9%	5,42896E+00	3,43E+00	3,73434E+02	6,63E+00	5,29695E+02	1,04E+01	5,04728E+04	7,61E+01	8,04335E+05	3,90E+02	6,23	84,58	100,01
l 5.1%	4,81805E+01	5,03E+00	8,94416E+02	8,56E+00	1,38989E+03	1,45E+01	1,23170E+05	9,64E+01	2,05014E+06	1,11E+03	15,21	99,78	99,50
m 5.3%	1,06387E+01	3,95E+00	4,94232E+01	3,53E+00	3,22865E+01	5,75E+00	1,76790E+03	8,45E+00	3,09743E+04	8,16E+01	0,22	100,00	90,55
total	1,96324E+02	2,19E+01	6,32122E+03	2,44E+01	9,05226E+03	3,76E+01	8,09979E+05	3,73E+02	1,29910E+07	4,80E+03	100,00		99,55343007

	36Ar/39Ar meas.	36Ar/39Ar +/- [1-sigma abs.]	37Ar/39Ar meas.	37Ar/39Ar +/- [1-sigma abs.]	38Ar/39Ar meas.	38Ar/39Ar +/- [1-sigma abs.]	40Ar/39Ar meas.	40Ar/39Ar +/- [1-sigma abs.]	37Ar/39Ar corrected	37Ar/39Ar +/- [1-sigma abs.]
a 3.6%	0,000115581	7,11542E-05	0,008686	6,93089E-05	0,011250	9,34296E-05	15,893610	0,050615177	0,48156104	0,003842767
c 3.8%	0,000086	0,000119762	0,008704	5,42294E-05	0,011495	0,000110745	16,753619	0,016274382	0,482583222	0,003006698
d 3.8%	0,000858	0,000132751	0,007262	0,000302094	0,011311	0,000310015	15,415784	0,02594891	0,490536619	0,020406117
e 3.9%	0,001002	0,00014611	0,007342	0,000318284	0,010715	0,000434723	15,480974	0,034424288	0,495911147	0,02149975
f 4.0%	0,000100	0,00030309	0,007518	0,000341372	0,010769	0,000439888	15,380125	0,027070212	0,507803574	0,023059307
g 4.1%	0,000466	0,000295701	0,007451	0,000369602	0,010864	0,000522915	15,659031	0,047299744	0,503335533	0,024966247
h 4.3 %	0,000306	5,09653E-05	0,007193	5,62594E-05	0,011069	0,000112061	15,434403	0,01416577	0,48590333	0,003800268
i 4.5 %	0,000218	0,000107366	0,007475	0,000163115	0,010842	0,000266622	15,734474	0,026937467	0,504901489	0,011018264
j 4.7%	0,000137	1,985E-05	0,007435	6,72728E-05	0,011171	9,49311E-05	15,815615	0,017359374	0,502253103	0,00454421
k 4.9%	0,000108	6,79471E-05	0,007399	0,000131816	0,010495	0,000207567	15,936007	0,025234951	0,499775861	0,008904023
l 5.1%	0,000391	4,08276E-05	0,007262	6,97503E-05	0,011284	0,000117917	16,644752	0,015830757	0,490514812	0,004711563
m 5.3%	0,006018	0,002233265	0,027956	0,00200014	0,018263	0,003254281	17,520423	0,095588101	1,888396827	0,135107442
total	0,000242381	2,70145E-05	0,007804	3,03128E-05	0,011176	4,67066E-05	16,038621	0,009463183	0,511419	0,001986443

	39ArK corrected	39ArK +/- [1-sigma abs.]	40Ar* corrected	40Ar* +/- [1-sigma abs.]	40Ar*/39ArK calculated	40Ar*/39ArK +/- [1-sigma abs.]	age [Ma]	+/- 1sigma [Ma]	+/- 1sigma +σλ [Ma]
a 3.6%	115001,3448	264,488150	1,82502E+06	4699,164555	15,869574	0,054789	212,8	0,8	9,295E-01
c 3.8%	131235,3885	107,323111	2196719,93	4786,960534	16,738777	0,038960	223,8	0,7	8,140E-01
d 3.8%	20218,55836	32,861989	306772,2795	805,559046	15,172807	0,046857	204,0	0,8	8,416E-01
e 3.9%	19442,44834	41,126373	295448,0915	865,210008	15,196033	0,054896	204,3	0,8	9,173E-01
f 4.0%	16286,44853	23,057610	250200,4584	1482,700953	15,362493	0,093601	206,4	1,3	1,332E+00
g 4.1%	13681,4309	39,154945	212513,8235	1213,942600	15,533012	0,099242	208,6	1,3	1,397E+00
h 4.3 %	93015,89136	77,055599	1428195,687	1512,220297	15,354319	0,020642	206,3	0,5	6,557E-01
i 4.5 %	41790,30401	67,048216	655345,816	1383,850857	15,681767	0,041588	210,5	0,7	8,081E-01
j 4.7%	183704,816	164,612844	2900130,098	2136,107352	15,786903	0,018312	211,8	0,5	6,586E-01
k 4.9%	50457,2952	76,078052	803065,3738	1086,414683	15,915744	0,032241	213,4	0,6	7,429E-01
l 5.1%	123133,253	96,363566	2036644,166	1854,444321	16,540164	0,019859	221,3	0,6	6,900E-01
m 5.3%	1,76585E+03	8,448326	28005,54209	1169,546564	15,859562	0,666647	212,7	8,4	8,457E+00
total	8,09725E+05	372,805421	12938939,66	8051,001488	15,979426	0,012369	214,2	0,5	6,426E-01