Roman Coins in Malta: a Preliminary Study

Richard Reece

Over thirty years ago I was lucky enough to help work on the Roman coins in the National Museum. The detail still needs further work, but the rough outlines of the numbers of coins of each emperor and each period of striking have been used several times in comparison with other collections in the Mediterranean area. As a new method has been developed for comparing collections in the last few years, I thought it might be of interest to give a short account of the method and how the National Museum collection appears when viewed in this particular way. Though the method was published in 1995 in the British journal Britannia, I have not applied it to any collection in detail so this is the first article written which puts the method to a particular use. I shall use the shorthand 'Malta' from now on, but we need to remember that this is not strictly true because it relies on the contents of only the one collection.

In 1969 there were about 3,787 Roman coins that could be identified closely enough to give a date within about twenty years. The numbers and the dates are given below:

to AD 41	189	180-193	67	348-364	259
41- 54	57	193-222	133	364-378	90
54- 69	62	222-238	225	378-388	56
69- 96	205	238-260	328	388-402	51
96-117	156	260-295	505	402-425	13
117-138	186	295-317	301	425-455	4
138-161	174	317-330	237	455-494	3
161-180	172	330-348	314		

These numbers can be put in diagram form in fig 1. If the coins are turned into coins per thousand then fig 2 results. The shape is exactly the same, but the collection can now be compared directly with any other collection that we turn into coins per thousand. A first point would be to compare Malta with an average (the arithmetic mean) obtained by collecting together a number of sites throughout the empire. This is fig 3, and it will be seen that Malta is different from the empire in general. Instead of making our eyes move backwards and forwards from fig 2 to fig 3, we can take the average away from Malta and the result is fig 4. Malta is higher in early coins, but lower in later coins.

Another comparison we can make is between coin loss on Malta and constant coin loss - the loss of roughly the same number of coins every 20 years or so. If we add up constant, or smooth, coin loss we get a straight line as in fig. 5. Since the same number of coins were, in theory, lost in each period, then as we add them up from AD 1 to AD 500, the points will move up a straight line from 1 to 1000 (always in coins per thousand). Before we start there are none, 0. When we finish adding up, there must be 1000 coins per thousand.

If we do the same to the Malta coins, fig 6, we can see that the result is not too far away from the idea of constant coin loss. We can put the two together on fig 7 and we see Malta lose a little less than constant numbers up to 260 and then lose more than constant numbers in the fourth century. This becomes clearer in fig 8 when we have one line which represents just the difference between Malta and constant loss. We can do the same for the difference between Malta and Empire Average Loss and that is fig 9.

This is the method I now like to use because it means that, once an Empire Average has been established, we can express the coins from any site in the empire as a single line joining up a number of points, and so compare our site with any others.

In work that I have recently been doing I have followed this method and sorted sites throughout the empire out into groups which resemble one another in the shape of their curves. This means they had similar sorts of coin loss, and presumably it means that they used coins in a similar way, and lost coins in a similar way. Fig 10 is extracted from this work which will not be ready for publication for some time to give an example for Malta. It shows the Malta curve, already seen in fig 9 with some of its closest companions. The fit is not perfect but, compared with other possibilities, quite close. The companions are Af Ben - Benghazi on the North coast of Africa in Libya, and a near neighbour in terms of space; Ib Clun - Clunia, northern Spain, SE of Burgos; and Alésia, the Gaulish hill settlement which turned into a Roman town, near Dijon in modern France. These sites have a very similar rise above average — which is the 0 line — up to 260, variation between 260 and 300, and then uniform decline compared to the Empire Average. This last phrase is extremely important. The whole method is one of comparison, comparison with the straight line which represents the average of a large number of sites.

To talk about decline is to talk about decline in coin use in relation to other sites around the empire. If we refer back to the simplest diagram, fig 1, we can see that in sheer numbers more fourth century coins were lost on Malta than second century

coins, so there is no decline in absolute coin loss. It is simply that other sites lose even more coins in the fourth century, so Malta, while losing a good number, drops behind the average.

There is just one further complication to introduce. The large number of early coins on Malta, and at Clunia and especially Alésia mean that the "decline" in the fourth century is bunched up into a multiple line almost impossible to unravel. We can liberate the smaller number of later coins from the oppressive effects of the large number of early coins by considering the coins in two parts: early coins up to 260 and later coins from 260 to the end. This results in further comparisons. Again I have extracted the diagrams from the work in progress to give an interim report for Malta.

In the early period, fig 11, Malta is similar to a very disparate group of sites. I will not bother with site names, because most are totally unknown outside their own localities. The best indicators are the national names: Fr for France, Slo for Slovenia, G for Germany, Sa for the Saarland, and Br for Britain. At one level, such far flung comparisons seem odd. How can it be that a site in Britain loses early Roman coins at roughly similar rates to one in Slovenia and another in Malta? Presumably, this is a powerful demonstration of the uniformity of the Roman Empire. Virtually all coin was struck at this date in Rome, and sent out to the western provinces in roughly similar manner. The sites where the coins were used show roughly similar coin loss provided they have a roughly similar life history.

In the later diagram, fig 12, Malta is grouped with different sites in Bav, Bavaria, Rom, Romania (the great site of Histria on the Danube Estuary), France again, and Rh, the Rhineland. Here the fit is very close. All these sites have above average coin loss between 260 and 330, but then they come quickly down, as judged against the average. Other groups of sites show a later rise, and a later fourth century, or even fifth century fall, but these details will have to wait for the publication of all the sites (and diagrams) together.

The method is in place, and seems to work. The average is constructed from a mere 108 sites because those are the ones I had easily to hand in publications and offprints. While the number of sites in Germany and Britain in the sample could easily be multiplied by 10, I think at present the number of sites in France could not even be doubled. Asia Minor shows coins from Troy and Sardis, but the coins from the great cities of Ephesus, Priene, Pergamum, and so on have never been collected together and published. North Africa has some of the most remarkable Roman cities of the Empire, yet years of expatriate archaeology by colonial powers has not produced a single coin list.

I mention this not so much to complain at the terrible state of affairs as to explain why it is not possible to compare Malta with nearby sites like Cyrene (in course of study), Leptis (?), Syracuse (?), or Naples (?). Malta has good coin collections, well looked after and known in outline. In this it is far ahead of most other Roman cities of the Mediterranean world. It is for this reason that I offer this short analysis to encourage Malta to stay in the forefront of Mediterranean coin studies.

fig 1. Malta: number of coins through time

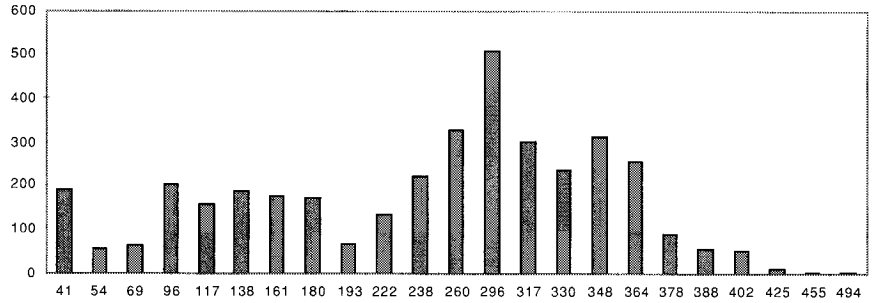


fig 2. Malta: coins per thousand through time

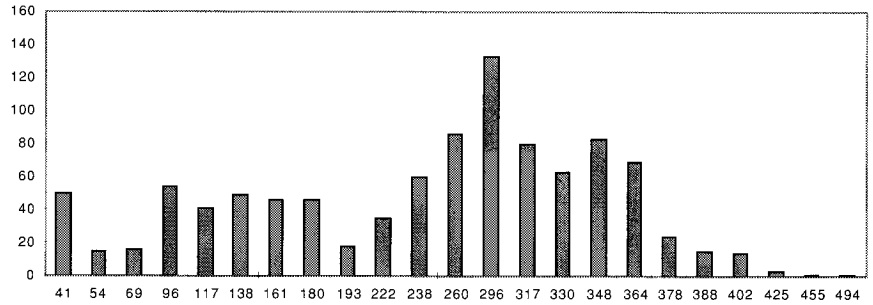


fig 3. Empire Average: coins per thousand through time

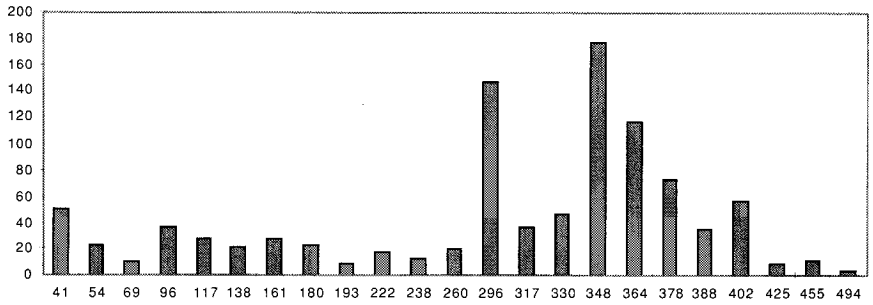


fig 4. Malta minus the Empire Average through time

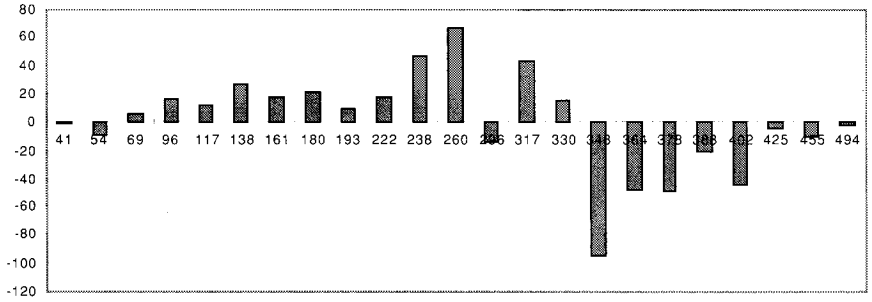


fig 5. Smooth coin loss added up through time

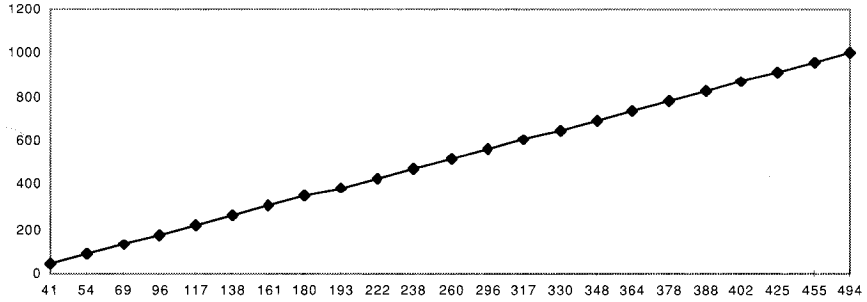


fig 6. Malta coin loss added up through time

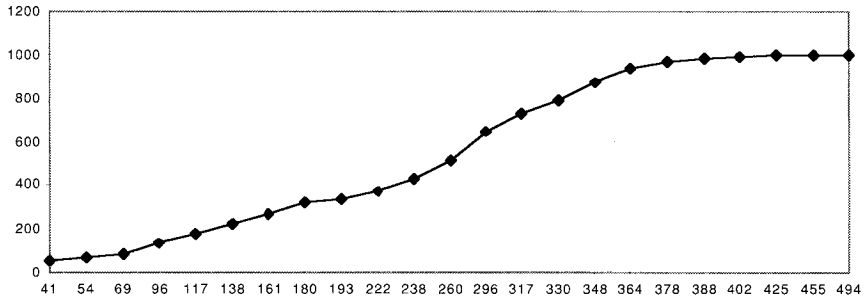


fig 7. Malta compared with smooth coin loss

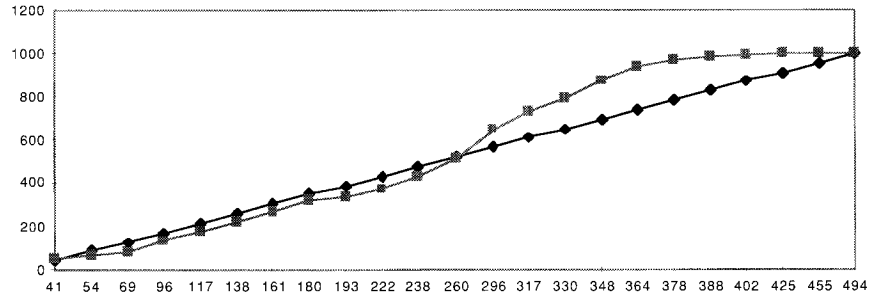


fig 8. Malta minus smooth coin loss

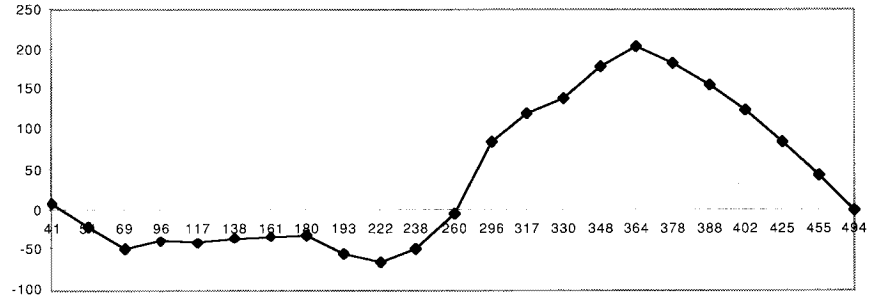
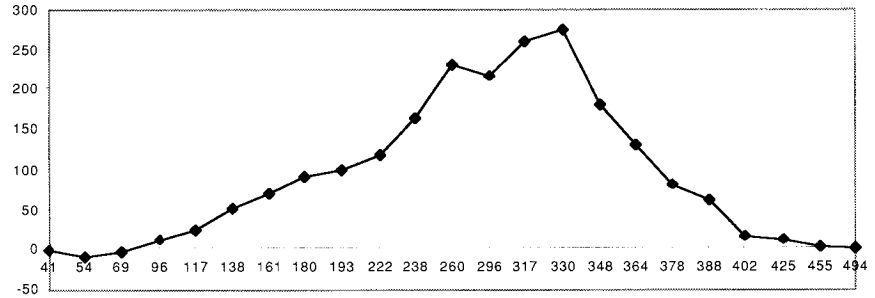


fig 9. Malta minus the Empire Average



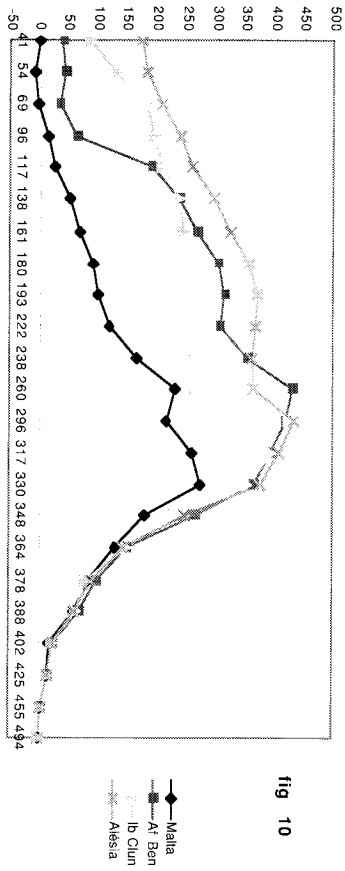


fig 10

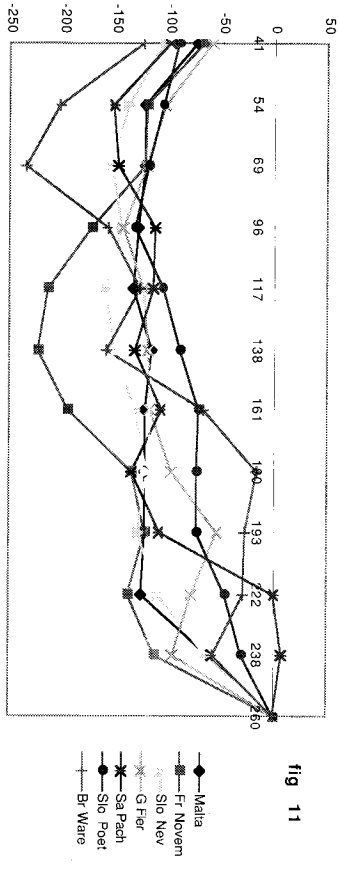


fig 11

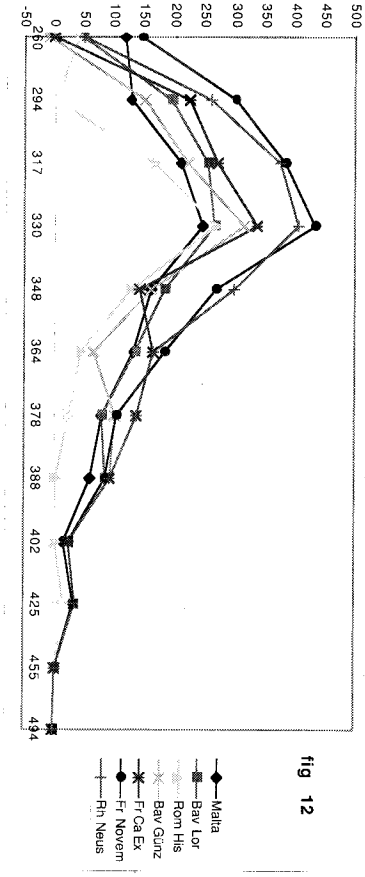


fig 12

	Malta	Malta %	Malta add	Malta - S	Malta - av	Average	Average+	Smooth
41	189	49.90758	49.90758	6.429318	-1.04794	50.95552	50.95552	43.47826
54	57	15.05149	64.95907	-21.9975	-9.87507	23.87862	74.83415	86.95652
69	62	16.3718	81.33087	-49.1039	-3.50109	9.997811	84.83196	130.4348
96	205	54.13256	135.4634	-38.4496	13.12059	37.51088	122.3428	173.913
117	156	41.19356	176.657	-40.7343	25.30298	29.01116	151.354	217.3913
138	186	49.11539	225.7724	-35.0972	51.61925	22.79912	174.1531	260.8696
161	174	45.94666	271.719	-32.6288	69.41585	28.15006	202.3032	304.3478
180	172	45.41854	317.1376	-30.6885	90.91282	23.92156	226.2248	347.8261
193	67	17.6921	334.8297	-56.4747	99.8953	8.709627	234.9344	391.3043
222	133	35.12015	369.9498	-64.8328	117.7286	17.28682	252.2212	434.7826
238	225	59.41378	429.3636	-48.8972	164.2643	12.87807	265.0993	478.2609
260	328	86.61209	515.9757	-5.76341	230.5403	20.3361	285.4354	521.7391
296	505	133.3509	649.3266	84.10926	216.3614	147.5298	432.9652	565.2174
317	301	79.48244	728.8091	120.1134	258.9502	36.89365	469.8589	608.6956
330	237	62.58252	791.3916	139.2177	274.1986	47.33419	517.193	652.1739
348	314	82.91524	874.3068	178.6547	179.7771	177.3367	694.5297	695.6522
364	259	68.39187	942.6987	203.5683	131.0192	117.1498	811.6795	739.1304
378	90	23.76551	966.4642	183.8555	81.8707	72.91402	884.5935	782.6087
388	56	14.78743	981.2517	155.1647	61.19831	35.45983	920.0533	826.0869
402	51	13.46712	994.7188	125.1536	17.31224	57.35319	977.4065	869.5652
425	13	3.432796	998.1516	85.10811	12.53762	8.207409	985.6139	913.0435
455	4	1.056245	999.2078	42.6861	2.473614	11.12026	996.7342	956.5217
494	3	0.792184	1000	1.91E-05	0	3.265798	1000	1000
	3787	1000						

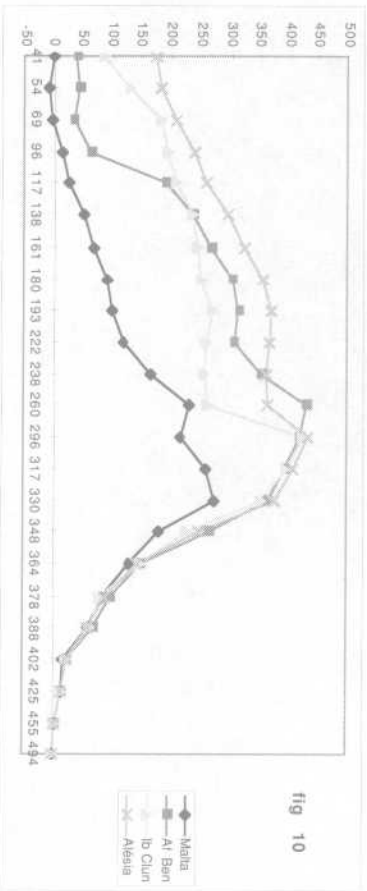
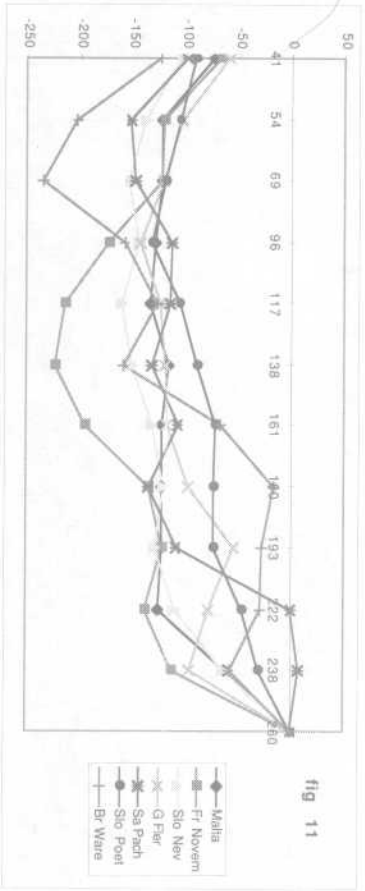


fig 10



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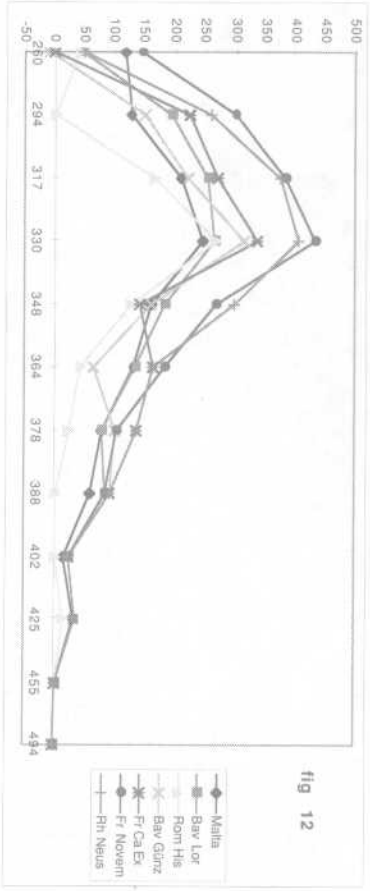

fig 12

	Malta	Malta %	Malta add	Malta - S	Malta - av	Average	Average+	Smooth
41	189	49.90758	49.90758	6.429318	-1.04794	50.95552	50.95552	43.47826
54	57	15.05149	64.95907	-21.9975	-9.87507	23.87862	74.83415	86.95652
69	62	16.3718	81.33087	-49.1039	-3.50109	9.997811	84.83196	130.4348
96	205	54.13256	135.4634	-38.4496	13.12059	37.51088	122.3428	173.913
117	156	41.19356	176.657	-40.7343	25.30298	29.01116	151.354	217.3913
138	186	49.11539	225.7724	-35.0972	51.61925	22.79912	174.1531	260.8696
161	174	45.94666	271.719	-32.6288	69.41585	28.15006	202.3032	304.3478
180	172	45.41854	317.1376	-30.6885	90.91282	23.92156	226.2248	347.8261
193	67	17.6921	334.8297	-56.4747	99.8953	8.709627	234.9344	391.3043
222	133	35.12015	369.9498	-64.8328	117.7286	17.28682	252.2212	434.7826
238	225	59.41378	429.3636	-48.8972	164.2643	12.87807	265.0993	478.2609
260	328	86.61209	515.9757	-5.76341	230.5403	20.3361	285.4354	521.7391
296	505	133.3509	649.3266	84.10926	216.3614	147.5298	432.9652	565.2174
317	301	79.48244	728.8091	120.1134	258.9502	36.89365	469.8589	608.6956
330	237	62.58252	791.3916	139.2177	274.1986	47.33419	517.193	652.1739
348	314	82.91524	874.3068	178.6547	179.7771	177.3367	694.5297	695.6522
364	259	68.39187	942.6987	203.5683	131.0192	117.1498	811.6795	739.1304
378	90	23.76551	966.4642	183.8555	81.8707	72.91402	884.5935	782.6087
388	56	14.78743	981.2517	155.1647	61.19831	35.45983	920.0533	826.0869
402	51	13.46712	994.7188	125.1536	17.31224	57.35319	977.4065	869.5652
425	13	3.432796	998.1516	85.10811	12.53762	8.207409	985.6139	913.0435
455	4	1.056245	999.2078	42.6861	2.473614	11.12026	996.7342	956.5217
494	3	0.792184	1000	1.91E-05	0	3.265798	1000	1000
	3787	1000						

	Malta	Malta %	Malta +	Malta - M	WWMean	WWM +		Malta	Malta %	Malta +	Malta - M	WWMean	WWM +
41	189	96.72467	96.72467	-74.0178	170.7425	170.7425	260	328	151.7816	151.7816	116.8651	34.9165	34.9165
54	57	29.17093	125.8956	-122.675	77.82805	248.5705	294	505	233.6881	385.4697	128.9454	221.6078	256.5243
69	62	31.72979	157.6254	-122.959	32.0143	280.5848	317	301	139.2874	524.7571	211.2266	57.00611	313.5304
96	205	104.913	262.5384	-128.697	110.6503	391.2351	330	237	109.6714	634.4285	247.4585	73.43959	386.97
117	156	79.83623	342.3746	-133.839	84.97842	476.2135	348	314	145.3031	779.7316	163.848	228.9136	615.8836
138	186	95.18936	437.564	-116.972	78.32244	554.536	364	259	119.8519	899.5835	132.7763	150.9236	766.8072
161	174	89.04811	526.6121	-123.202	95.27838	649.8144	378	90	41.64739	941.2309	80.25758	94.16612	860.9733
180	172	88.02456	614.6366	-123.634	88.45603	738.2704	388	56	25.91393	967.1448	60.48624	45.68527	906.6586
193	67	34.28864	648.9253	-123.141	33.79605	772.0664	402	51	23.60019	990.745	15.75278	68.33365	974.9922
222	133	68.06551	716.9908	-126.668	71.59222	843.6586	425	13	6.015733	996.7608	12.21269	9.555818	984.5481
238	225	115.1484	832.1392	-63.8846	52.36511	896.0238	455	4	1.850995	998.6118	2.13078	11.93291	996.481
260	328	167.8608	1000	0	103.9762	1000	494	3	1.388246	1000	0	3.519026	1000
	1954				1000			2161				1000	

fig 1			fig 2			fig 3			fig 4			
	Malta			Malta %			Average			Malta-Av		
41	189		41	49.90758		41	50.95552		41	-1.04794		
54	57		54	15.05149		54	23.87862		54	-8.82713		
69	62		69	16.3718		69	9.997811		69	6.373987		
96	205		96	54.13256		96	37.51088		96	16.62168		
117	156		117	41.19356		117	29.01116		117	12.18239		
138	186		138	49.11539		138	22.79912		138	26.31627		
161	174		161	45.94666		161	28.15006		161	17.79659		
180	172		180	45.41854		180	23.92156		180	21.49698		
193	67		193	17.6921		193	8.709627		193	8.982477		
222	133		222	35.12015		222	17.28682		222	17.83333		
238	225		238	59.41378		238	12.87807		238	46.53571		
260	328		260	86.61209		260	20.3361		260	66.27599		
296	505		296	133.3509		296	147.5298		296	-14.1789		
317	301		317	79.48244		317	36.89365		317	42.58879		
330	237		330	62.58252		330	47.33419		330	15.24833		
348	314		348	82.91524		348	177.3367		348	-94.4215		
364	259		364	68.39187		364	117.1498		364	-48.7579		
378	90		378	23.76551		378	72.91402		378	-49.1485		
388	56		388	14.78743		388	35.45983		388	-20.6724		
402	51		402	13.46712		402	57.35319		402	-43.8861		
425	13		425	3.432796		425	8.207409		425	-4.77461		
455	4		455	1.056245		455	11.12026		455	-10.064		
494	3		494	0.792184		494	3.265798		494	-2.47361		

fig 5			fig 6		fig 7				fig 8			
	Smooth			Malta add		Smooth	Malta			Malta - S		
41	43.47826		41	49.90758	41	43.47826	49.90758		41	6.429318		
54	86.95652		54	64.95907	54	86.95652	64.95907		54	-21.9975		
69	130.4348		69	81.33087	69	130.4348	81.33087		69	-49.1039		
96	173.913		96	135.4634	96	173.913	135.4634		96	-38.4496		
117	217.3913		117	176.657	117	217.3913	176.657		117	-40.7343		
138	260.8696		138	225.7724	138	260.8696	225.7724		138	-35.0972		
161	304.3478		161	271.719	161	304.3478	271.719		161	-32.6288		
180	347.8261		180	317.1376	180	347.8261	317.1376		180	-30.6885		
193	391.3043		193	334.8297	193	391.3043	334.8297		193	-56.4747		
222	434.7826		222	369.9498	222	434.7826	369.9498		222	-64.8328		
238	478.2609		238	429.3636	238	478.2609	429.3636		238	-48.8972		
260	521.7391		260	515.9757	260	521.7391	515.9757		260	-5.76341		
296	565.2174		296	649.3266	296	565.2174	649.3266		296	84.10926		
317	608.6956		317	728.8091	317	608.6956	728.8091		317	120.1134		
330	652.1739		330	791.3916	330	652.1739	791.3916		330	139.2177		
348	695.6522		348	874.3068	348	695.6522	874.3068		348	178.6547		
364	739.1304		364	942.6987	364	739.1304	942.6987		364	203.5683		
378	782.6087		378	966.4642	378	782.6087	966.4642		378	183.8555		
388	826.0869		388	981.2517	388	826.0869	981.2517		388	155.1647		
402	869.5652		402	994.7188	402	869.5652	994.7188		402	125.1536		
425	913.0435		425	998.1516	425	913.0435	998.1516		425	85.10811		
455	956.5217		455	999.2078	455	956.5217	999.2078		455	42.6861		
494	1000		494	1000	494	1000	1000		494	1.91E-05		

fig 9			fig 10					fig 11				
	Malta - av			Malta	Af Ben	Ib Clun	Alésia		Malta	Fr Novem	Slo Nev	G Fler
41	-1.04794		41	-1.05242	37.27529	84.22696	173.1779	41	-74.0178	-67.675	-105.203	-60.3977
54	-9.87507		54	-9.87093	42.81706	130.3474	183.4591	54	-122.675	-120.963	-138.634	-103.743
69	-3.50109		69	-3.49913	32.81706	182.6676	207.9419	69	-122.959	-123.53	-153.735	-121.964
96	13.12059		96	13.12343	63.93451	193.0962	239.729	96	-128.697	-174.057	-143.878	-142.959
117	25.30298		117	25.30698	191.7873	207.231	260.1221	117	-133.839	-214.864	-161.203	-124.489
138	51.61925		138	51.62238	237.6147	238.1223	296.0092	138	-116.972	-224.475	-150.731	-120.053
161	69.41585		161	69.41904	268.2882	244.4881	324.8883	161	-123.202	-194.6	-131.844	-118.78
180	90.91282		180	90.91758	303.1918	250.2901	355.0134	180	-123.634	-135.816	-120.934	-96.8911
193	99.8953		193	99.89968	314.0896	270.3433	368.6498	193	-123.141	-122.987	-129.36	-54.825
222	117.7286		222	117.7298	306.6035	259.7647	366.1487	222	-126.668	-138.137	-110.043	-78.1414
238	164.2643		238	164.2636	352.5471	257.4312	362.5525	238	-63.8846	-114.429	-65.157	-96.0238
260	230.5403		260	230.5357	430.2463	261.0605	363.4327	260	0	-1.1E-13	-1.1E-13	-1.1E-13
296	216.3614		296	216.3566	419.9712	426.0904	433.4093					
317	258.9502		317	258.9491	392.8851	395.9118	409.1188					
330	274.1986		330	274.2016	365.1629	354.3344	375.3829					
348	179.7771		348	179.7768	266.2543	229.727	248.7724					
364	131.0192		364	131.0187	149.1043	148.0515	142.2325					
378	81.8707		378	81.87422	95.80216	80.89418	89.21637					
388	61.19831		388	61.20165	70.14608	63.65086	59.72454					
402	17.31224		402	17.30877	22.59	22.59	22.59					
425	12.53762		425	12.54157	14.39	14.39	14.39					
455	2.473614		455	2.477816	3.27	3.27	3.27					
494	0		494	1.14E-13		1.14E-13	0					

fig 11 continued					fig 12						
Sa Pach	Slo Poet	Br Ware			Malta	Bav Lor	Rom His	Bav Günz	Fr Ca Ex	Fr Novem	Rh Neus
-98.4533	-90.9213	-124.231		260	116.8651	47.40057	42.25392	-7.13872	-0.43374	146.3462	51.2904
-152.185	-106.169	-202.059		294	128.9454	194.6952	3.925861	150.8831	226.2343	299.4838	260.7171
-148.055	-120.304	-234.073		317	211.2267	256.5916	168.7847	223.5066	272.6765	383.0073	376.1248
-114.127	-131.976	-158.677		330	247.4585	265.469	268.9786	316.7337	337.1679	432.7856	406.1334
-114.768	-106.482	-127.376		348	163.848	182.8969	126.8817	161.8942	142.7371	269.0451	297.9095
-132.849	-89.0188	-159.187		364	132.7763	135.6318	46.69762	66.52613	164.2273	183.2946	164.2273
-107.646	-71.9089	-68.4191		378	80.25761	81.09987	23.27107	101.9897	139.0267	104.4035	139.0267
-135.861	-74.158	-17.3402		388	60.48624	84.19506	3.309246	93.3414	93.3414	86.21309	93.3414
-109.416	-73.4713	-27.8804		402	15.75283	25.0078	2.499761	25.0078	25.0078	23.98947	25.0078
-0.28511	-46.7237	-29.7051		425	32.21266	35.4519	16.1593	35.4519	35.4519	35.4519	35.4519
7.590658	-30.762	-58.8145		455	2.130754	3.519	3.519	3.519	3.519	3.519	3.519
0	1.14E-13	0		494	2.27E-13	0	-1.1E-13	-1.1E-13	0	0	1.14E-13