



Figure S1 Frequency distributions of seven craniofacial traits demonstrating a heritable basis. Fusion of the first and second suborbital bones (A) and fragmentation of the third suborbital bone (D) occur with approximately equal frequency on the left and right sides of the head, despite a detectable genetic basis being observed on the right side only. The total area of the second suborbital bone (B), third suborbital bone (C) and fifth suborbital bone (G) demonstrated a roughly normal distribution in our mapping pedigree. The fourth suborbital bone demonstrated a positively skewed distribution until we transformed our phenotypic measurements with a \log^{10} transformation (E). Fusion of the fourth and fifth suborbital bones (F) occurred with approximately equal frequency on the left and right sides of the head, despite a detectable genetic basis being observed on the left side only.

Tables S1-S2

Available for download as Excel files at <http://www.genetics.org/lookup/suppl/doi:10.1534/genetics.114.161661/-/DC1>

Table S1 Raw phenotypic measurements of craniofacial and other traits evaluated in this study.

Table S2 Genotypic data used for linkage group calculations and QTL analyses.

Table S3 Summary of ANOVA and covariate analyses of sex and craniofacial QTL.

Trait	DF	ANOVA				Covariate Analysis			Method
		Sum of Squares	Mean Square	F-value	P-value	Significant Marker (LOD)	LOD Covariate - Sex	Associated Marker (P-value)	
RSO1+2 Fusion	1	0.456	0.45564	1.823	0.1784	-	-	215D (0.998); 229B (0.656)	HK
	213	53.237	0.24994						
RSO2 Area	1	0.373	0.37295	1.4899	0.2236	-	-	110B (0.783); 229B (0.777)	HK
	213	53.32	0.25033						
RSO2 Area Residuals	1	2.24	2.24047	9.275	0.0026*	227A (LOD 5.38)	227A (LOD 3.84)	227A (0.032**)	HK
	213	51.453	0.24156						
LSO2 Area	1	1.496	1.49606	6.105	0.0143*	-	-	NYU27 (0.86); 229B (0.761)	EM
	210	51.461	0.24505						
LSO2 Area Residuals	1	4.013	4.0128	17.217	0.00005*	227A (LOD 5.35)	227A (LOD 4.15)	227A (0.012**)	HK
	210	48.945	0.2331						
RSO3 Area	1	0.16	0.16048	0.6384	0.4252	-	-	55B (0.167); 229B (0.065)	HK
	214	53.798	0.25139						
RSO3 Area Residuals	1	0.014	0.013598	0.0539	0.8166	-	-	-	MR
	214	53.945	0.252078						
LSO3 Area	1	0.15	0.15017	0.5969	0.4406	55B (LOD 4.02)	55B (LOD 3.83)	55B (0.039**); 229B (0.082)	HK
	210	52.831	0.25158						
LSO3 Area Residuals	1	0.005	0.004662	0.0185	0.892	-	-	203F (0.057)	EM
	210	52.976	0.252269						
RSO3 Number	1	0.025	0.025239	0.1001	0.752	206A (LOD 5.34)	206A (LOD 5.62)	206A (0.003**)	HK
	214	53.933	0.252024						
RSO4 Area	1	0.034	0.033822	0.1342	0.7145	-	-	-	MR
	214	53.948	0.252092						
RSO4 Area Residuals	1	0.597	0.59699	2.3931	0.1233	-	-	-	-
	214	53.384	0.24946						

LSO4 Area	1	0.304	0.30388	1.2106	0.2726	-	-	229B (0.464)	EM
	193	48.445	0.25101						
LSO4 Area Residuals	1	0.357	0.35721	1.4247	0.2341	-	-	-	-
	193	48.392	0.25073						
LSO4+5 Fusion	1	0.054	0.053678	0.213	0.6449	-	-	-	MR
	211	53.167	0.251976						
RSO5 Area	1	0.068	0.068261	0.2709	0.6032	-	-	NYU53 (0.23)	HK
	214	53.913	0.251931						
RSO5 Area Residuals	1	0.695	0.69548	2.7931	0.0961	-	-	-	-
	214	53.286	0.249						
LSO5 Area	1	0.011	0.011236	0.0445	0.8331	-	-	-	MR
	193	48.727	0.252473						
LSO5 Area Residuals	1	0.132	0.13198	0.5241	0.47	-	-	-	MR
	193	48.606	0.25185						

* Indicates ANOVA result significant at $p < 0.05$

** Indicates covariate analysis result significant at $p < 0.05$