TABLE 4
Regression line parameters

Pressure [kb]	n	a [km sec^{-1}]	b $\frac{\text{km sec}^{-1}}{\text{g cm}^{-3}}$	$S_{(V,\rho)}$ [km sec^{-1}]	r	r^2 [%]
			$V_p = a + b\rho$			
0.5	32	−3.55	3.32	0.20	0.96	92
1.0	32	−3.47	3.31	0.19	0.96	93
2.0	32	−3.35	3.28	0.18	0.97	94
6.0	32	−2.61	3.06	0.17	0.97	94
10.0	32	−2.01	2.88	0.17	0.96	92
			$V_s = a + b\rho$			
0.5	32	−3.04	2.15	0.16	0.94	88
1.0	32	−2.73	2.06	0.15	0.94	89
2.0	32	−2.31	1.92	0.14	0.94	89
6.0	32	−1.53	1.66	0.14	0.92	85
10.0	32	−1.11	1.52	0.15	0.91	83
Pressure [kb]	n	a [g cm^{-3}]	b $\frac{\text{g cm}^{-3}}{\text{km sec}^{-1}}$	$S_{(V,\rho)}$ [g cm^{-3}]	r	r^2 [%]
			$\rho = a + bV_p$			
0.5	32	1.20	0.278	0.06	0.96	92
1.0	32	1.17	0.281	0.06	0.96	93
2.0	32	1.13	0.285	0.05	0.97	94
6.0	32	0.97	0.306	0.05	0.97	94
10.0	32	0.85	0.322	0.06	0.96	92
			$\rho = a + bV_s$			
0.5	32	1.57	0.411	0.07	0.94	88
1.0	32	1.48	0.433	0.07	0.94	89
2.0	32	1.38	0.462	0.07	0.94	89
6.0	32	1.19	0.512	0.08	0.92	85
10.0	32	1.07	0.545	0.09	0.91	83

n = number of data points,
$S_{(V,\rho)}$ = standard error of estimate of V on ρ,
$S_{(\rho,V)}$ = standard error of estimate of ρ on V,
r = correlation coefficient,
r^2 = coefficient of determination.

In addition, the data has been filtered in accordance with the mean standard error of the refraction determinations. The distribution is similar to that found in earlier treatments [2, 9] and is clearly representative of the wide range in velocities observed for layer 2.

If the velocity histogram of fig. 5a is broken down into age groups as in figs. 5b and 5c, strikingly different velocity distributions can be seen for young and old sea floor. Young oceanic crust (fig. 5b) displays generally high layer 2 compressional wave velocities, the commonly observed values ranging from 4.5 to 6.3 km/sec with a mode of nearly 6.0 km/sec; old sea floor velocities (fig. 5c) are characteristically low, with common values ranging from 4.2 to 5.0 km/sec about a mode of 4.6 km/sec. Though it is possible to explain the entire spectrum of layer 2 velocities in terms of submarine weathering, it is evident from the wide range of velocities observed in each group that other processes such as neovolcanism, low grade metamorphism and fracturing are in part responsible for this range. Nonetheless, a pronounced trend of decreasing layer 2 refraction velocities with age similar to that observed in the laboratory is clearly indicated. We conclude that this trend, both in the laboratory and in the field, may be attributed to deep, progressive submarine weathering in oceanic layer 2 and that such weathering is consistent with the theory of sea floor spreading.

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