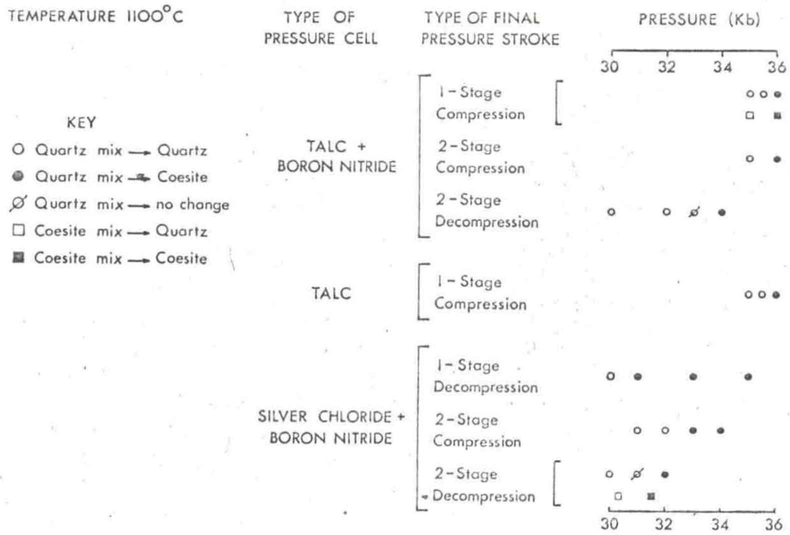

Fig. 2. Results of high-pressure runs on the quartz-coesite transition at 1100°C using different pressure cells.

the pressure vessel and to friction within the talc and boron nitride. It represents a −4% pressure correction to a two-stage compression run, and the quartz-coesite transition at 1100°C, using this correction, is placed at 34.3 kb.

With the silver chloride + boron nitride pressure medium for a two-stage compression run, the quartz-coesite transition at 1100°C occurs at a nominal pressure of 32.5 kb; in a two-stage decompression run it occurs at 31 kb. Thus the difference in pressure between compression and decompression results for the quartz-coesite transition is 1.5 kb. This is attributed to piston friction and to friction within the boron nitride, since friction losses in the silver chloride are considered to be negligible, and it represents a −2% friction correction to a two-stage compression run. The quartz-coesite transition at 1100°C, using this correction, is placed at 31.8 kb.

There remains a discrepancy of 2.5 kb between the results obtained using talc and silver chloride pressure mediums, even after corrections for friction losses have been made. To bring these results into agreement, a further correction of −7% is needed for a two-stage compression run with talc + boron nitride as the pressure medium.

Discussion

This work indicates that at 35 kb and 1100°C a *total* pressure correction of −11% is needed on a two-stage compression run, and this correction appears to consist of two components. The first of these is an irreversible component being characterized by hysteresis; it is attributed to frictional losses between the piston and cylinder and in the talc + boron nitride pressure medium. This correction amounts to −4%. The second component of pressure loss is re-

TABLE 2. Quartz-Coesite Transition at 1100°C as Determined in Piston-Cylinder Apparatus

	Boyd and England [1960*a*]	*Kitahara and Kennedy* [1964]	*Khitarov* [1964]	This Work
Corrected pressure, kb	32.3	32.8	31.3	31.8
Uncorrected pressure, kb	35	35.3		35.5