

TABLE 1. Experimental results

| Run | $T^{\circ}\text{C}$ | X_{CO_2} | Time (h) | Initial quartz: calcite | Extent of reaction |
|---------------------------------------|---------------------|-------------------|----------|-------------------------|--------------------|
| Runs with -100 +200 starting material | | | | | |
| 20A | 649 \pm 7 | .210 | 67 | 1:1 | .45 |
| 21A | 649 \pm 3 | .153 | 90 | 1:1 | .40 |
| 23A | 649 \pm 3 | .2 \pm .05 | 94 | 1:1 | .36 |
| 24A | 645 \pm 4 | .195 | 301 | 1:1 | .45 |
| 26A | 644 \pm 4 | .229 | 113 | 1:1 | .38 |
| B | | | | | .41 |
| 27A | 648 \pm 3 | .203 | 156 | 1:1 | .25 |
| B | | | | | .32 |
| 28A | 650 \pm 4 | .169 | 330 | 1:1 | .39 |
| B | | | | | .41 |
| 29A | 649 \pm 3 | .165 | 324 | 1:1 | .35 |
| B | | | | | .41 |
| 31A | 652 \pm 4 | .2 \pm .05 | 235 | 1:1* | .51 |
| B | | | | | .46 |
| 32B | 650 \pm 4 | .2 \pm .05 | 68 | 1:1* | .23 |
| 37A | 649 \pm 3 | .133 | 426 | 1:1* | .79 |
| B | | | | | .66 |
| 38A | 650 \pm 3 | .245 | 345 | 1:1* | .76 |
| B | | | | | .81 |
| 39A | 650 \pm 3 | .150 | 512 | 1:1* | .97 |
| B | | | | | .82 |
| 40A | 655 \pm 3 | .166 | 493 | 1:1* | .37 |
| B | | | | | .54 |
| 42A | 645 \pm 6 | .187 | 186 | 1:1* | .72 |
| B | | | | | .66 |
| 43A | 645 \pm 4 | .143 | 336 | 1:1* | .68 |
| 48B | 646 \pm 2 | .192 | 851 | 1:1* | .42 |
| 49A | 642 \pm 6 | .187 | 851 | 1:1* | .76 |
| B | | | | | .76 |
| 50A | 647 \pm 4 | .265 | 521 | 1:1* | .97 |
| B | | | | | 1.00 |
| 51A | 651 \pm 2 | .203 | 403 | 1:1† | .79 |
| B | | | | | .66 |
| 52A | 648 \pm 2 | .189 | 403 | 1*1‡ | .81 |
| B | | | | | .85 |
| 53A | 649 \pm 2 | .203 | 334 | 3:1 | .59 |
| B | | | | | .59 |
| C | | | | | .64 |
| Runs with -200 +325 starting material | | | | | |
| 58A | 660 \pm 11 | .231 | 330 | 2:1 | .80 |
| B | | | | 4:1 | .72 |
| 60A | 650 \pm 5 | .183 | 306 | 2:1† | .75 |
| B | | | | 4:1† | .64 |
| 61A | 650 \pm 3 | .202 | 16 | 2:1† | .42 |
| B | | | | 4:1† | .69 |
| 62A | 650 \pm 3 | .177 | 89 | 2:1† | .55 |
| B | | | | 4:1† | .46 |
| 63A | 650 \pm 4 | .181 | 473 | 2:1† | .70 |
| B | | | | 4:1† | .81 |
| 64A | 650 \pm 2 | .165 | 41 | 2:1† | .48 |
| B | | | | 2:1† | .47 |

*Mix previously annealed at 700°C, 2000 bars P_{CO_2} for 48 h.

†Annealed mix. Top of capsule packed with extra quartz.

‡Not annealed. Top of capsule packed with extra quartz.

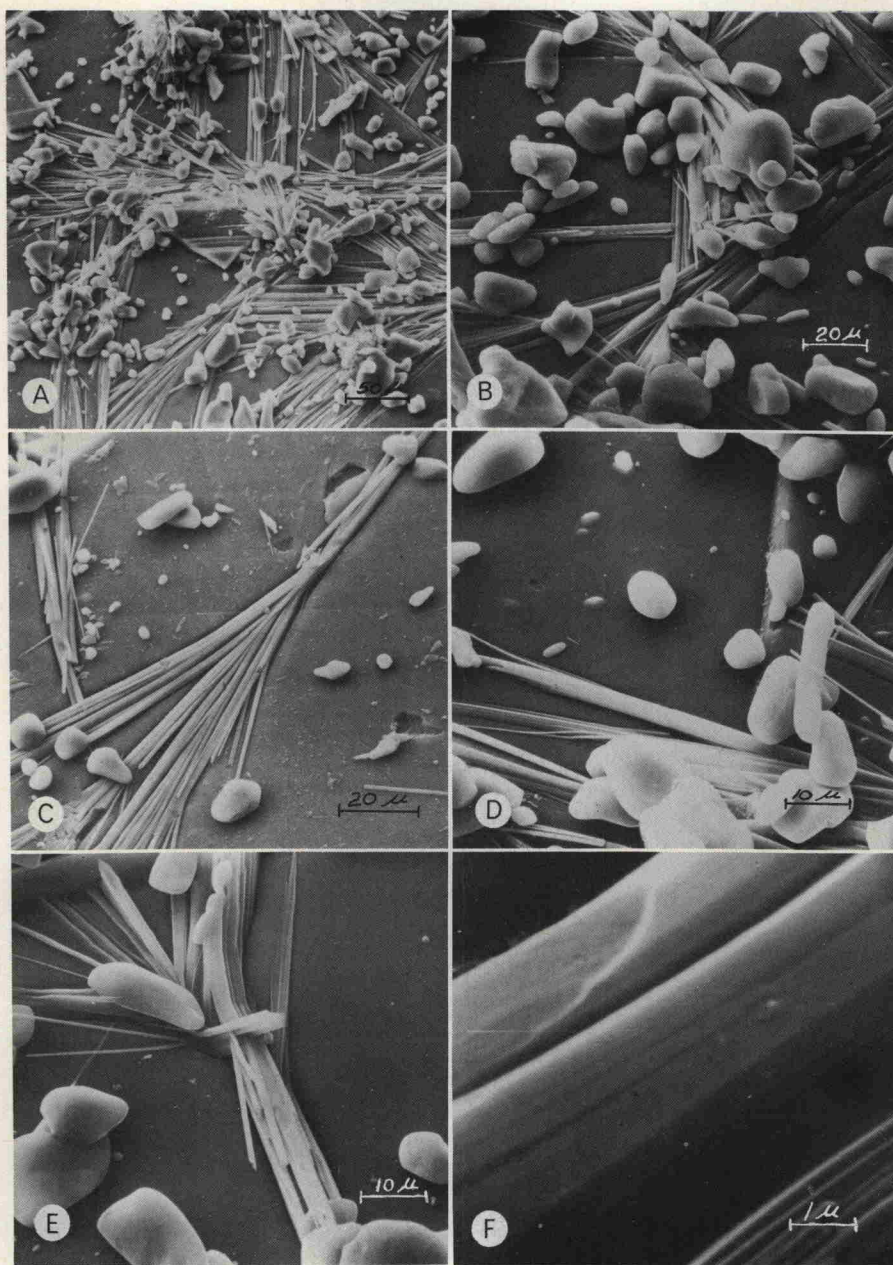


FIG. 2. Run W-67 2000 bars, $646^{\circ} \pm 2^{\circ}\text{C}$, $X_{\text{CO}_2} = 0.175$, $T = 19$ h.

A) General view of specimen surface. Wollastonite appears to have nucleated at specific centers and grown parallel to calcite surface. Calcite substrate, rounded quartz, wollastonite needles. $\times 180$.

B) Closer view of surface. What appears to be a crystallization center at top center is obscured by quartz grains. $\times 450$.

C) Surface view. Apparent indentation of calcite surface near wollastonite may be a result of sample coating technique, but this, and next two photographs, suggest the indentation is real. $\times 420$.

D) Detail showing cleavage step in calcite surface and indentation of calcite near wollastonite crystals. $\times 900$.

E) Detail of crystallization center. Wollastonite crystal perpendicular to surface may have been broken in sample preparation. Calcite appears indented near wollastonite. $\times 900$.

F) Detail of wollastonite crystal showing "steps" on surface. $\times 8400$.