Time Monitoring Observations of SiO J = 2-1 and J = 3-2 Maser Emission toward Late-Type Stars II. Analysis

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We present results of detailed analysis of observations of the 28SiO (v = 1, 2, 3) J = 2-1 and J = 3-2 transitions have been made for 10 late-stars with the 14-m radio telescope at Taeduk Radio Astronomy Observatory (TRAO). The v = 3 maser lines were detected in stars at the optical phase around 0.2, which is the turnover phase from rising to infalling gas motion in stellar pulsation. The v = 1 and v = 2 masers also tend to have their intensity maxima near the optical phase 0.2. It was found from the result that the repetitiveness of SiO maser line profiles is poor during each expanding and contraction phases of stellar pulsations. We also report the line intensity ratios of different transitions examined in order to further constrain maser pump models.