# Abstracts

## K-Band Traveling-Wave Maser Using Ruby

*K.S. Yngvesson, A.C. Cheung, M.F. Chui, A.G. Cardiasmenos, S.-Y. Wang and C.H. Townes. "K-Band Traveling-Wave Maser Using Ruby." 1976 Transactions on Microwave Theory and Techniques 24.11 (Nov. 1976 [T-MTT] (Special Issue on Millimeter Waves: Circuits, Components, and Systems)): 711-717.*

A K-band ruby traveling-wave maser (TWM) has been developed, which has provided a decrease in system noise temperature compared to other front ends presently used in radio telescopes at K-band by an order of magnitude. The maser uses a new type of photoetched slow-wave structure, integral with the ruby rod, especially suitable for millimeter-wave masers. It also employs a new type of built-in isolator configuration, which guarantees stable net gain of typically 30 dB over the tunable bandwidth, which is about 20 percent. Its phase stability, both short and long term, is excellent, making it highly suitable for use on an interferometer for radio astronomy.

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