

## THE PERIOD OF SU SCUTI

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Abstract

A redetermination of the period of SU Sct has been carried out on the basis of some 700 plates taken at the Maria Mitchell Observatory between 1920 and 1976.

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The Second Supplement to the third edition of the General Catalog of Variable Stars gives two alternative periods for SU Sct, 1.46230 days or 0.594015 day. In order to resolve this ambiguity, magnitude estimates have been made on the approximately 700 plates of the region taken at the Maria Mitchell Observatory between 1920 and 1976. The observations have been analysed with an IBM 1130 computer at Lindbergh Senior High School in St. Louis, Mo. A modification of a program supplied to the Maria Mitchell Observatory by Dr. Carl Hammer of UNIVAC Corporation yielded 1.4625 days as the most probable (constant) period. However, the O - C values for this period indicate that the period may be changing sinusoidally in a period on the order of nine years. Further analysis is needed.

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 MIRA-TYPE VARIABLES OBSERVED IN THE INFRARED  
 AT AN ALTITUDE OF 13.7 KM

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ABSTRACT

Infrared spectra of Mira-type variables were obtained from a NASA Lear Jet in February, 1976, flying at an altitude of 13.7 km. At this altitude, less than 1% of the earth's water vapor remains above the telescope and hence the entire near-infrared spectrum of these very red stars is seen unobscured. This observational program could not be conducted without the assistance of the AAVSO which provided visual magnitude predictions for these variables, which vary from 6th to 13th magnitudes. For a given observing date it is most important to know how bright a particular variable will be as there is only a limited observing time possible each flight.

A folded 12-inch telescope of Dall-Kirkham design was used for these observations. The infrared spectrum of Mira (o Ceti) and the "hot" water bands and carbon monoxide (CO) features are discussed.

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