

Database for Visual Observations of Variable Stars in Japan

By

Keiichi SAJO

Department of Science and Engineering, National Science Museum,
Ueno Park, Tokyo 110, Japan

and

Sei-ichiro KIYOTA

Variable Star Observers League in Japan, c/o Department of Science and
Engineering, National Science Museum, Ueno Park, Tokyo 110, Japan

Abstract

Database for visual observations of variable stars in Japan is completed after elaborate work of archiving of visual data by members of Variable Star Observers League in Japan (VSOLJ). Although it needs current addition of the latest observations, it includes about one million observations for about five thousand stars from early 1910's to the present.

1. Introduction

Visual observation of variable stars in Japan began in early 1910's by late Dr N. ICHINOHE and continued to the present time by mainly amateur observers. However, the majority of observed data remained to be not published and some were published in fragments, which are now difficult to access.

In order to help various study in the field of variable stars, archiving of visual observations of variable stars in Japan was planned and making of machine-readable database of those data started in 1987 soon after the foundation of Variable Star Observers League in Japan. This plan is named MIRA (million observations input, reduction and archives) project by members of VSOLJ, in course of elaborate works, collecting and inputting the data and developing computer programme.

The number of data reaches about one million, the number of stars are about five thousand and the number of observers are about 700.

At the present time, this database for visual observations of variable stars in Japan is nearly completed, although it needs current addition of the latest observations.

2. Database

This database is now constituted in personal computer basis. Raw data of total

Table 1. Sample fragment of data.

Star Name*	Date** yymmddhhmmss	Magnitude***	Observer
CETomicron	2401241836	54	Ksy
CETomicron	2401261836	54	Ksy
CETomicron	2401281850	54	Ksy
CETomicron	2401291836	53	Ksy
CETomicron	2401301850	53	Ksy

* Represented by Constellation (capitals) plus variable star name.

** Represented by Japan Standard Time (JST); yy: year-1900, mm: month, dd: day, hh: hour, mm: minutes, ss: second, if necessary.

*** Represented without decimal point.

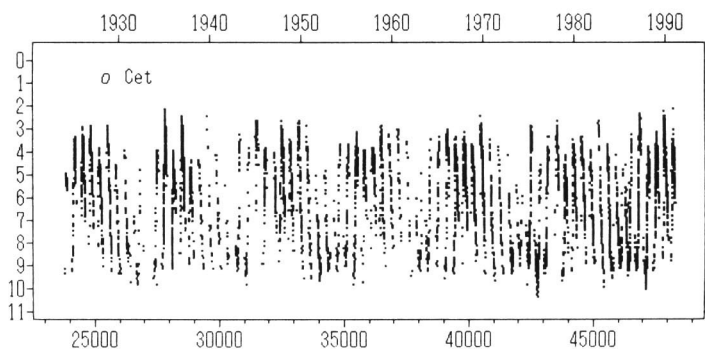


Fig. 1. Light curve of Omicron Ceti for all observational data. Upper abscissa indicates date of year and lower abscissa indicates Julian Day-2400000. Ordinate shows magnitude.

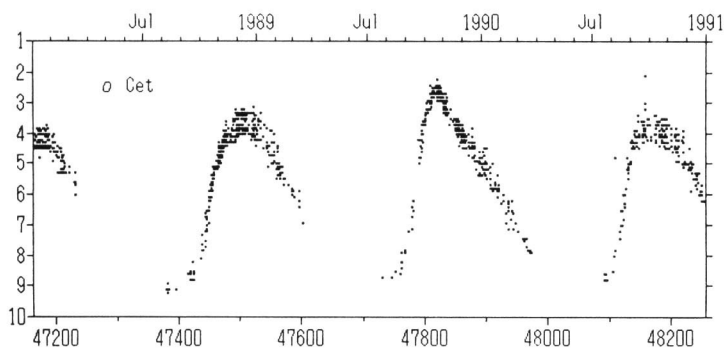


Fig. 2. Light curve of Omicron Ceti for recent data. Abscissa and ordinate indicate similar to fig. 1.

of about 25 MB are changed to data files of about 80 MB to conform database programme, which volume is about 1.2 MB and is mainly made by Mr Taichi KATO. Explanation of the database programme and data format is shown in KATO (1990).

Data for a specific star are obtained from the database. For example, sample fragment of data are shown in table 1. Each line shows one observation and contains name of the objects, time of the observation, observed magnitude, observer code and error mark if necessary.

Light curve of a specific star is also obtained. Figure 1 and 2 show the sample light curves of Mira for all observations and those of optional period.

3. Usage of the database

The database covers long period of about 90 years and will be used to analyzes the long-term behaviour of long-period, semiregular, RCB type variables and cataclysmic variables, which include to determine maxima and minima of the light curves, to revise the periods, to correlate different parameters of the light curve and to study statistically.

The database will be also used to compare with spectroscopic and photometric data obtained various wavelength and will give important information of variable stars.

We also plan current development of the database and database programme. Similar work is also in course by AAVSO (WAAGEN 1986), which contains about six million data. International cooperation in the future will be fruitful.

Acknowledgement

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