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**THE RR LYRAE VARIABLE CH Oph AND A NEW MIRA IN ITS FIELD**

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The variable star CH Oph was discovered by Swope (1928). Later the discoverer published a low-quality photographic finding chart (Swope 1932). The star was never studied in detail, the GCVS (Kholopov 1985) gives no type for the star and only the variability range (15.5 to fainter than 16.5 pg).

In our current effort to provide identifications and accurate coordinates for all stars of the GCVS (cf. Samus et al., 2002), we are now working on the constellations of the GCVS Volume II. The variable CH Oph could not be readily found from its published coordinates and the finding chart. An attempt to recover the variable using archive images provided by the US Naval Observatory Flagstaff Station revealed a variable object not far from the GCVS position of CH Oph. However, the positional difference was larger than usual for variables discovered by H.H. Swope in 1920ies. A check in the Harvard plate stacks has shown that our variable object is not identical with the real CH Oph, which was also identified beyond doubt. Figure 1 presents the finding chart for both variables. The coordinates of the two stars from the Guide Star Catalogue, Version 2.2.01, are:

CH Oph     $16^{\text{h}}54^{\text{m}}03^{\text{s}}.5, \quad -27^{\circ}14'45'', \quad 2000.0;$

New var.    $16^{\text{h}}54^{\text{m}}05^{\text{s}}.9, \quad -27^{\circ}16'47'', \quad 2000.0.$

We estimated the brightness of the two variables on 88 plates of the Moscow collection taken with the 40 cm astrograph in Crimea (JD 2437109–2448454). We used comparison stars from the Tycho2 and USNO A2.0 catalogs.

CH Oph is an RR Lyrae (RRAB) star with the elements

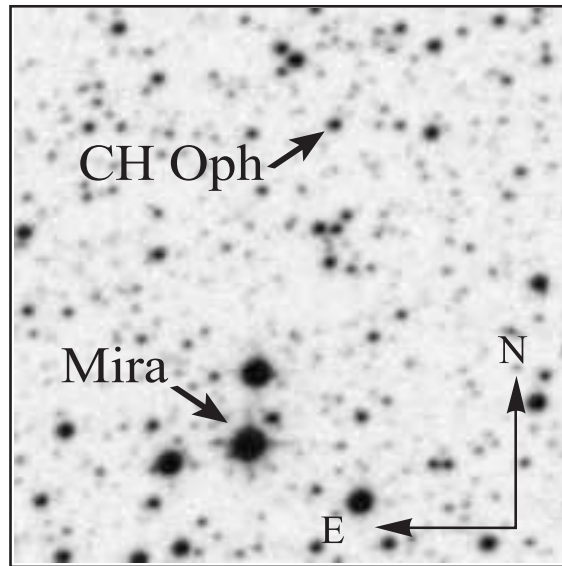
$$\text{Max Hel} = 2447264.573 + 0^{\text{d}}561375 \times E.$$

It varies between  $14^{\text{m}}.5$  and  $16^{\text{m}}.0$  *B*. Note that, for this southern region, the limiting magnitude of our plate collection is usually between  $15^{\text{m}}.5$  and  $16^{\text{m}}.5$ , so the star is a difficult object for our plates. Its light curve (Fig. 2) shows a considerable scatter near minimum.

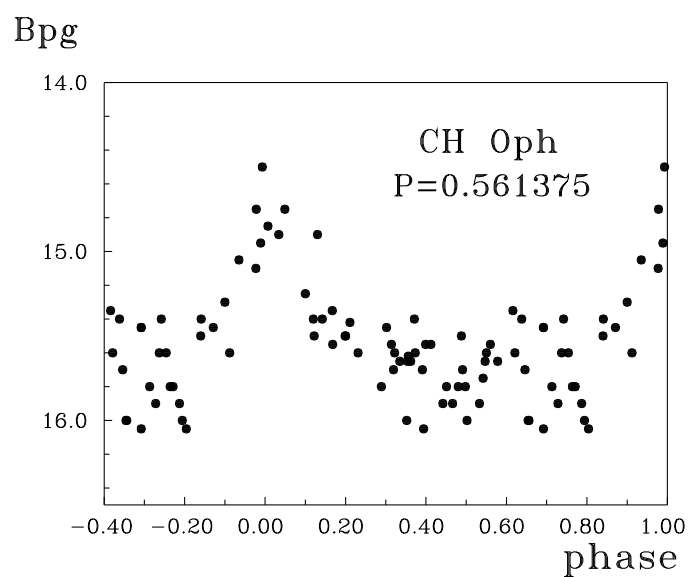
Our new variable is a Mira, with the variability range from  $12^{\text{m}}.3$  to fainter than  $16^{\text{m}}.5$  *B* (Fig. 3). It can be identified with IRAS PSC 16509–2711. The star's light elements are

$$\text{Max} = 2447740 + 349^{\text{d}}.4 \times E.$$

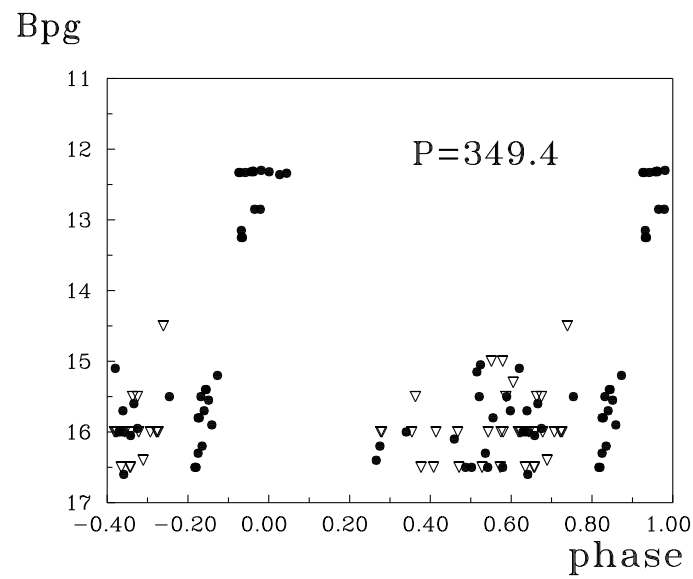
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**Figure 1.** The finding chart for CH Oph and the new Mira variable. The size of the chart is  $3'5 \times 3'5$ . This is a red image of the second Digitized Sky Survey.



**Figure 2.** The  $B$  light curve of CH Oph.



**Figure 3.** The  $B$  light curve of the new Mira variable in the field of CH Oph. Triangles are bright limits.

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