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THE 2003 SUPEROUTBURST OF A NEW SU UMA-TYPE DWARF NOVA, GO COMAE BERENICES

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We photometrically observed the 2003 superoutburst of GO Com, which is a candidate for WZ Sge-type dwarf novae (WZ). However, the obtained light curve is atypical of both types: a plateau stage is too short for SU UMa-type dwarf novae (SU) while the amplitude of the superoutburst is too small for WZ. In order to explain this behavior, it might be taken into account that the mass accretion onto the white dwarf is efficient during quiescence.

We succeeded in observing the 2003 superoutburst of GO Com, with the period of superhump 0.06359 d. In these proceedings, we shall briefly discuss about the behavior of the system.

Supercycle: Judging from the long-term monitoring, a supercycle of GO Com is about 2000 days, the longest value among well-known SU. Such a long supercycle is reminiscent of WZ. It is plausible that GO Com is an intermediate system between SU and WZ.

Precursor: A superhump exists during a precursor of the 1993 superoutburst of T Leo (Kato 1997). However, no evidence is found in GO Com.

O-C diagram: SU with a shorter orbital period (1.5h) sometimes shows positive $\dot{P}$, suggesting that the mechanism of an superoutburst is different from that of negative $\dot{P}$ SU. Most WZ show positive $\dot{P}$. Judging from these facts, the mechanism of a superoutburst of GO Com is similar to WZ rather than SU with a longer orbital period.

Plateau and Amplitude: The plateau stage of GO Com during 2003 superoutburst lasted for only 8 days with an amplitude about 4.5mag. In conjunction with these facts, it is likely that the mass accretion onto the white dwarf during the superoutburst is intrinsically low. In addition, it is possible that the mass accumulation on the accretion disc during quiescence is also low. This scenario can be explained under the condition that the mass accretion onto the white dwarf during quiescence is efficient, supported by the fact that GO Com is an X-ray source J125637.12+263644.2. In order to satisfy the condition, magnetic fields in GO Com must be taken into account.

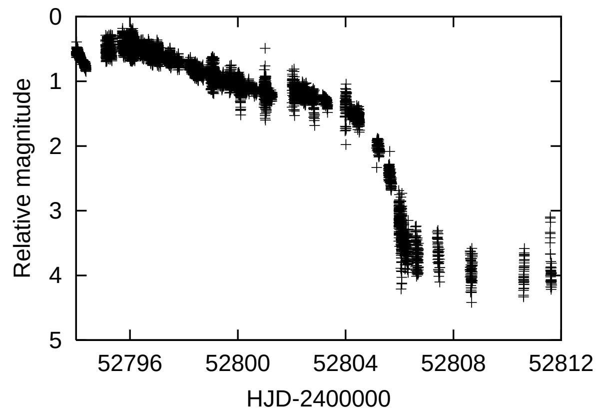

Fig. 1. The light curve of the 2003 superoutburst of GO Com, accompanied with a precursor. The magnitude of the bright maximum corresponds to 13.3 in R. Especially interesting is that the plateau stage lasted for only 8 days.

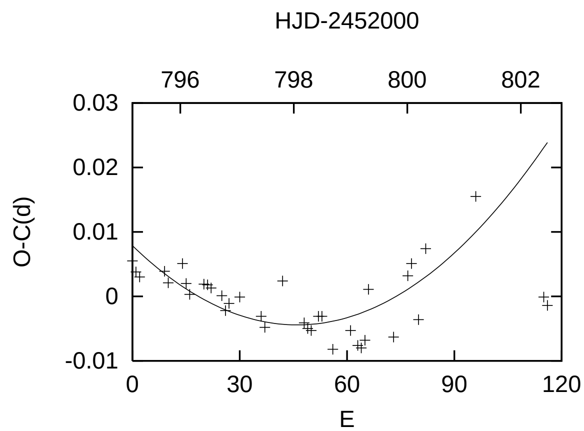

Fig. 2. O-C diagram of superhump maxima. The abscissa denotes the cycle count since 2452795.1515.

More details will be given in A. Imada et al. (in preparation).

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