

Survey of period variations of superhumps in SU UMa-type dwarf novae. IX. the ninth year (2016-2017)

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Abstract

© The Author 2017. Published by Oxford University Press on behalf of the Astronomical Society of Japan. All rights reserved. Continuing the project described by Kato et al. (2009, PASJ, 61, S395), we collected times of superhump maxima for 127 SU UMa-type dwarf novae observed mainly during the 2016-2017 season and characterized these objects. We provide updated statistics of the relation between the orbital period and the variation of superhumps, the relation between period variations and the rebrightening type in WZ Sge-type objects. We obtained the period minimum of 0.05290(2) d and confirmed the presence of the period gap above the orbital period ~ 0.09 d. We note that four objects (NY Her, 1RXS J161659.5+620014, CRTS J033349.8-282244, and SDSS J153015.04+094946.3) have supercycles shorter than 100 d but show infrequent normal outbursts. We consider that these objects are similar to V503 Cyg, whose normal outbursts are likely suppressed by a disk tilt. These four objects are excellent candidates to search for negative superhumps. DDE 48 appears to be a member of ER UMa-type dwarf novae. We identified a new eclipsing SU UMa-type object, MASTER OT J220559.40-341434.9. We observed 21 WZ Sge-type dwarf novae during this interval and report 18 of them in this paper. Among them, ASASSN-16js is a good candidate for a period bouncer. ASASSN-16ia showed a precursor outburst for the first time in a WZ Sge-type superoutburst. ASASSN-16kg, CRTS J000130.5+050624, and SDSS J113551.09+532246.2 are located in the period gap. We have newly obtained 15 orbital periods, including periods from early superhumps.

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Keywords

accretion, accretion disks, novae, cataclysmic variables, stars: dwarf novae

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