T. Kato1993 Superoutburst of LL Andromedae
Taichi Kato Department of Astronomy, Kyoto University, Sakyo-ku, Kyoto 606-8502 tkato@kusastro.kyoto-u.ac.jp
accretion, accretion disks — stars: dwarf novae — stars: individual (LL Andromedae) — stars: novae, cataclysmic variables
abstract We present time-resolved CCD photometry of LL And during its 1993 outburst. The observation revealed the presence of superhumps with a period of 0.05697(3) d. This period is one of the smallest among the hydrogen-rich dwarf novae. Although LL And has been proposed to be a WZ Sge-type dwarf nova based on its low outburst frequency, our new analysis indicates that the outburst amplitude (∼ 5 mag) and outburst duration (9 ± 2 d) are much smaller and shorter than in typical WZ Sge-type dwarf novae. We suspect that the unusual outburst properties of LL And might be explained by assuming a “leaky disk” in quiescence, which was originally proposed to explain the prototypical WZ Sge-type outbursts. By combination with the recent suggestion of the orbital period, the fractional superhump excess is found to be 3.5(1) %, which is unusually large for this short-period system. LL And may be an object filling the gap in the evolutionary track, which has recently been proposed to explain the unusual ultracompact binaries with an evolved mass donor.