The RXTE, ROSAT, IUE, EUVE, Optical Campaign Covering the 45-Day Supercycle of V1159 Orionis *(Abstract)*

Paula Szkody
University of Washington, Seattle, WA 98195

Kent Honeycutt
Jeff Robertson
Indiana University, Bloomington, IN 47405

Andrew Silber
D. W. Hoard
Lora Pastwick
University of Washington, Seattle, WA 98195

Ivan Hubeny
John Cannizzo
National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD 20771

William Liller
Viña del Mar, Chile

Ronald Zissell
Mt. Holyoke College, South Hadley, MA 01075

Gary Walker
Sherborn, MA 02030

Constanze la Dous
Sternwarte Sonneberg, 96515 Sonneberg, Germany

Janet Drew
Imperial College, London, SW7 2BZ, England

Abstract A comprehensive data set covering the superoutburst and 8 outbursts of the 45-day supercycle of the dwarf nova V1159 Ori was obtained in February–March 1996. The use of RXTE, ROSAT, IUE, and EUVE satellites, combined with ground-based optical photometry and spectroscopy, provided a broad picture of the accretion disk at different states. Results include an inverse correlation of the X-ray with the UV/optical fluxes, an outflowing wind during all outbursts, and large changes in the disk spectrum on time scales of less than a day. These results are compared to other dwarf novae and general theories of dwarf nova outbursts.

High Resolution Time-resolved UCLES Spectroscopy of AE Aqr: I. The Secondary Star Revealed *(Abstract)*

Juan Echevarria
Instituto de Astronomía, Universidad Nacional Autónoma de México, Apartado Postal 877, Ensenada, Baja California, 22800, México

Francisco Diego
David Mills
Department of Physics and Astronomy, University College London, Gower Street, London, WC1 6BT, England

Robert Connon Smith
Astronomy Centre, University of Sussex, Falmer, Brighton, Sussex BN1 9QJ, England

Abstract High-dispersion time-resolved spectroscopy of the cataclysmic variable AE Aqr has been obtained. The emission lines have a complex structure that make it difficult to measure the motion of the white dwarf. The cross-correlation for the absorption lines shows a clear asymmetric profile, as expected from a heated side of the red star. The spectral type for the secondary star varies from K2 to K5; there are clear indications that the temperature varies as a function of star longitude. The radial velocity analysis yields K_{ab} = 165.2 ± 0.6 *Km* s^{-1} for the cross-correlated secondary star. The rotational velocity of the red star has been measured as a function of orbital period. It shows ellipsoidal variations with a period half the orbital period. The rotational velocities vary within the range V_{rot} *sin i* = 105 ± 3 *Km* s^{-1} and V_{rot} *sin i* = 130 ± 3 *Km* s^{-1}. The former can be used to constrain the white dwarf semi-amplitude value to yield K_{em} = 139 ± 4 *Km* s^{-1}, consistent with derived values from published radial velocity measurements. From a variation in the absorption line strength of 30%, we constrain the inclination angle to *i* = 58° ± 3. The estimated masses of the binary are: M_w = 1.07 ± 0.07 $M_\odot$ and M_r = 0.90 ± 0.05 $M_\odot$. If this is correct we should expect a spectral type of G5 if the secondary star is a main sequence star. We suggest that the discrepancy is explained if the star has a radius 40% greater than a main sequence star for a mass of 0.90 $M_\odot$.