# 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 $i = 58° \pm 3$. The estimated masses of the binary are: $M_w = 1.07 \pm 0.07\ M_\odot$ and $M_r = 0.90 \pm 0.05\ M_\odot$. 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 $M_\odot$.