critical. The effects of this radiation field upon the envelope ejected in the 1934 outburst were determined with a photoionization programme which includes all important X-ray heating and ionization processes (Compton recoil by both bound and free electrons, the Auger effect, and secondary ionization by suprathermal electrons). Our calculations show that many observed features of the nebula follow as a very natural consequence of this model. Specifically, the nebula is expected to be very cool, \( \sim 300 \) K, and to show extremely strong recombinant lines of ionized carbon, nitrogen, and oxygen, as previously reported by Williams et al. (Ap.J., 229, 171). Time variations of the inferred nebular composition are to be expected, as the reestablishment of accretion flows, formation of a disk, and the ensuing emergence of an X-ray flux must follow upon the turnoff of the underlying white-dwarf nova remnant. Scrutiny of the spectroscopic data for DQ Her suggests that this turnoff occurred in the late 1940's, and that the nebula cooled rapidly in this stage. The relevance of our results to studies of other nova nebula remnants is examined.

13.09 Two-Fluid Calculations with Conduction of X-Ray Emission from Accreting Nonmagnetic Degenerate Dwarfs. G.J. Weast, U. of Ill., and C.P. Kylafis, U. of Ill. and C.P. Kylafis and Lamb have recently completed a comprehensive study of X-ray emission from accreting nonmagnetic degenerate dwarfs. Their calculations assumed a common temperature for the electrons and the ions, and neglected electron conduction. However, when Compton cooling of the X-ray emission region becomes important at high masses, electron conduction begins to play a role. Here we report the results of calculations which allow the temperatures of the electrons and the ions to differ and which include electron conduction. Our calculations show that the X-ray spectrum is softer but the X-ray luminosity is larger when a two-fluid treatment is used. However, the changes are generally \( \leq 25\% \). Electron thermal conduction is less important than one might expect. We illustrate these points by comparing the results of one- and two-fluid calculations for a 1.4 \( M_\odot \) star accreting at a rate of 0.3 \( M_\odot \). This research is supported in part by the NSF under grant NSF PHY78-04404 and by NASA under contract NGR22-007-272. D.Q. Lamb is a John Simon Guggenheim Memorial Fellow.

14.01 A Magnitude Limited Stellar Survey with Einstein, K. Topka, L. Gold, F.R. Harnden, Jr., P. Gorenstein, R. Rosner, and G.S. Vaisanen, Harvard-Smithsonian Center for Astrophysics - We have conducted a complete survey for X-ray emission from stars brighter than visual magnitude 8.5 that serendipitously fell into the Imaging Proportional Counter field-of-view (\( \sim 1' \times 1' \)) of the Einstein Observatory (HEAO-2). The survey (carried out for observations made between 1978 December 18 and 1979 July 13 with effective exposure times in excess of 500 sec) includes 237 separate fields with exposure times ranging from 500 to 50,000 sec, with most fields having exposure times of \( \approx 2500 \) sec. These fields are found to contain 250 stars with \( V \leq 8.5 \), with a wide range of spectral types and luminosity classes represented. X-ray emission in excess of 3\( \sigma \) above local background was discovered from 33 stars; 3\( \sigma \) upper limits have been determined for the remaining 204 stars. Comparison of X-ray source detection statistics with the expected frequency distribution of stars brighter than \( V = 8.5 \) as a function of spectral type and luminosity class shows that the present optical magnitude limited survey can define the X-ray luminosity function for DF stars and provides constraints for the high-luminosity tails of the X-ray luminosity functions for other types of stars constructed from the pointed stellar survey.

Also Osservatorio Astronomico di Palermo

14.02 The Einstein Central Hyades Survey: A Progress Report. R. Stern, J. H. Underwood, Jet Prop. Lab. H. Zolocinski, and S. Antiochos, Stanford Univ. - We report on the status of a search for soft X-ray sources in the central region (\( \sim 5' \)) of the Hyades cluster. The survey is being conducted as part of the HEAO-2 (Einstein) guest investigator program. Its main purpose is to determine the incidence and characteristics of stellar coronae as a function of luminosity and spectral type in the cluster, and thus aid in formulating coronal models. To date, 11 IPC observations, with typical exposure times \( \approx 1000 - 2000 \) sec (corresponding to a detection limit \( L_x \sim 10^{31} \) ergs\(^{-1}\) at the Hyades distance) have been completed. An analysis of two 1\( \times \) diameter IPC fields indicates the presence of 5 sources, at least two of which appear to be