DISCUSSION AFTER PAPER BY VILA

Faulkner to Hesser: Can you tell us whether there is any indication of emission features in CD $-42°14462$?

Hesser: Yes; Hα is in emission and Hβ and Hγ have weak variable absorption.

Ostriker to Vila: Is it certain that accreting white dwarfs cannot burn H stably? Is it not possible if H is accreted sufficiently rapidly? Has this been tried?

Vila: No calculations have been made but I understood that it would not work.

Ostriker: A thermal runaway will occur if burning is in a degenerate region but possibly not if the region is non-degenerate. Such a non-degenerate zone may be produced if the accretion rate is high enough.

Vila: This should be calculated.

Paczyński to Vila: What is the cooling time of a 1 $M_\odot$ white dwarf until it disappears entirely?

Vila: It is shorter than that for 0.6 $M_\odot$.

Ostriker: Cooling times are a maximum somewhere in the middle of the white dwarf mass range. At 0.7 $M_\odot$ the time is about 7×10^9 yr. Above 0.7 $M_\odot$ and up to 1.4 $M_\odot$, Debye effects dominate and the time reduces to 10^9 yr. At 0.3 $M_\odot$ convection dominates and the time is again reduced.

Weidemann to Vila: There is no observational evidence for the existence of either crystallization or liquefaction sequences. John Graham's observations show that the DA white dwarfs form a very well defined and continuous cooling sequence. For the cooler DA's the surface gravity is constant, $\log g = 8.3$. For the hotter DA's, the surface gravity might be somewhat lower ($\log g = 8$) as derived by differential comparison for 40 Eri B and from hydrogen line broadening.

Ruben to Hesser: (1) What is the amplitude of the 30 sec variations? (2) Has the star been observed for polarization?

Hesser: The amplitude is very low. No polarization studies have been made.

Tayler (ed.), Late Stages of Stellar Evolution, 236.