

Recently, Ahern *et al.* (Astron. and Astrophys. 58, 35 (1977) have argued that V1016 Cygni is a low-mass planetary nebula in the process of formation. It is well-known that V1016 Cygni, the prototypical radio-emitting mass outflow object, underwent a 5 mag outburst in 1965. Therefore, we decided to search for similar optical outbursts from those objects in our short list of possible embryonic planetary nebulae using the archival plate collection of Harvard College Observatory. To our surprise, no large brightenings ($\Delta B > 1$ mag) of the type exhibited by V1016 Cygni were found in the stars associated with other radio-emitting proto-planetary candidates. The implications of this null result for models of the mass outflow from embryonic planetary nebulae will be discussed briefly.

RECOMBINATION LINES FROM COMPACT HII REGIONS

Peter Silverglate and Yervant Terzian
National Astronomy and Ionosphere Center,
Cornell University, Ithaca, N.Y.

Radio recombination lines of hydrogen (H167 α) have been observed from 45 HII regions using the Arecibo telescope. Nine of these sources also show the C167 α line, and twenty show H210 β lines. Some of the carbon lines, particularly those from W48 and G62.2 + .5, show a significant negative displacement from the H167 α velocities. This can be explained if the lines originate in the ionization front or in neutral material swept up by the ionization front. The displacement is 3.8 km/sec for W48, and 5.7 km/sec for G62.2 + .5. The source G37.7 + .1 exhibited two H167 α lines, one 25 km/sec wide at 87.3 km/sec and one 16 km/sec wide at 48 km/sec, velocities with respect to the local standard of rest. This may be a case of two HII regions in the same line of sight. Parameters for the HII regions, such as electron temperatures and densities, are derived. (Paper to appear in the Astronomical Journal.)