MONOCHROMATIC CCD IMAGES OF THREE PLANETARY NEBULAE

WALTER A. FEIBELMAN

NASA-Goddard Space Flight Center, Lab. for Astronomy and Solar Physics, Greenbelt

We present monochromatic false-color images of three planetary nebulae obtained by means of a CCD camera at the f/13.5 focus of the 0.91m reflector of the Cerro Telolo Interamerican Observatory in August, 1985. The resultant image scale is 0.363 arcsec square per pixel. The objects, IC 1297, NGC 7009, and M2-9 were imaged through narrow band filters in the V band, [O III] λ5007, and Hα λ6563, respectively. The V band filter corresponds to the standeard Johnson V magnitude. The λ5007 filter has a FWHM of 14 Å. The Hα filter has a FWHM of 73 Å, thus including contributions from the [N II] $\lambda\lambda$6548, 6584 lines. IC 1297 shows a double shell structure with a pronounced bright rim at the extreme edge of the faint outer envelope, suggesting that it is density bounded. NGC 7009 (the "Saturn" nebula), in addition to the well-known double shell and extended W-W ansae, also shows a faint large, circular outer halo which strongly suggests that NGC 7009 is a member of the rare class of triple-shell nebulae. The bipolar object M2-9 (the "Butterfly" nebula) shows a bright, non-stellar central core from which the wings extend in a nearly N-S direction. Condensations in the wings are seen particularly well for the [O III] λ5007 images. The CCD images were obtained by B. Schaefer at CTIO and were processed at the Goddard Image Processing Facility.

https://doi.org/10.1017/S0074180900170664 Published online by Cambridge University Press