

OH EMISSION FROM CIRCUMSTELLAR ENVELOPES OF POST-AGB STARS

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Abstract

We searched for OH radiation in a sample of 53 objects selected from the IRAS PSC. According to their color properties the sources have the cool envelopes ($T_{\text{env}} 150\text{--}300\text{K}$) of objects in evolution between OH-IR stars and planetary nebulae (PN). The sources were chosen from within the southern sky with declinations $\delta < -30^\circ$. We sought the OH radical at the frequency of 1612, 1665, and 1667 MHz with the 30m-antenna of the Instituto Argentino de Radioastronomía (IAR). We found OH radiation in emission and/or absorption towards thirteen of the sources, among which are two known bipolar nebulae. There is evidence of an uneven distribution of the matter surrounding the star for Roberts 22 (IRAS 10197-5750). Its OH variability was studied. For the objects detected in emission , we present evidence for infrared radiative pumping of the 1612 MHz maser line. The importance of the mass loss process for understanding the evolutionary stage of the objects and its influence on OH line is discussed.