Four new electronic transitions with blue-degraded bandheads were observed in the orange-red region of the visible spectrum. The transitions were observed in the plasma discharge of a hollow copper cathode placed within the cavity of a tunable dye laser system, allowing molecular absorbance to be enhanced upon laser amplification. To produce the molecules, the surface of the copper cathode was soaked in a dilute ammonia solution prior to installation, and 1 torr of H$_2$ was used as the sputter gas in the dc plasma discharge. The bandheads were observed at 16,560 cm$^{-1}$, 16,485 cm$^{-1}$, 16,027 cm$^{-1}$, and 15,960 cm$^{-1}$. Using 1.5 torr of D$_2$ as the sputter gas resulted in a -3 cm$^{-1}$ shift in origin for the bands in the 16,000 cm$^{-1}$ region. Four rotational branches have been identified in each transition, and the transitions have been fit to independent $^2\Sigma^- - ^2\Pi$ transitions using PGOPHER, with spin-orbit splittings in the Hund’s case (a) $\Pi$-states of -71.2 cm$^{-1}$ and -65.4 cm$^{-1}$. The transitions have tentatively been assigned to HCuN. Results of this analysis will be presented.