FOURIER TRANSFORM EMISSION SPECTROSCOPY OF THE VISIBLE BANDS OF GOLD CHLORIDE

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The visible bands of gold chloride, AuCl, have been recorded at high resolution (0.05 cm^{-1}) in the 17000 - 20000 cm^{-1} region. The spectrum was recorded in emission using the Fourier transform spectrometer associated with the McMath-Pierce Solar Telescope at Kitt Peak. Excited gold chloride molecules were produced in a microwave discharge with $AuCl_3$ powder in the discharge tube using 4 torr of helium seeded with 3 ppm chlorine. Four vibronic bands of the $A - X^1\Sigma^+$ transition were observed. Four vibronic bands [(0,0), (1,0), (2,0) and (0,1)] of the $B0^+ - X^1\Sigma^+$ were observed. Spectroscopic parameters for the X, A, and B states will be presented.