NEW BAND SYSTEMS OF YbI MOLECULE IN THERMAL EMISSION

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Thermal emission spectrum of Ytterbium monoiodide (YbI) molecule has been photographed for the first time in the spectral region 4500-5400 Å at a reciprocal linear dispersion of 7.3 Å/mm using high temperature vacuum graphite furnace at 2000 °C and 2m Plane Grating Spectrograph (PGS-2). About 94 single and double headed, violet degraded bands have been recorded out of which 82 are entirely quite new. The observed bands have been classified into three systems out of which two are entirely new. The vibrational analysis has been carried out and it is suggested that these systems arise from the ground state $^2\Sigma$. The vibrational constants determined for the systems are given below:

System	Region	ω_e'	$\omega_e' x_e'$	ω_e''	$\omega_e'' x_e''$	ν_{00}
B_1-X	$\lambda\lambda$5000 - 5300 Å	168.0	0.60	153.0	0.70	19133.6
B_2-X	$\lambda\lambda$5000 - 5200 Å	165.0	0.30	153.0	1.40	19381.0
C_1-X	$\lambda\lambda$4900 - 5100 Å	174.5	0.10	153.0	0.70	19940.2