HIGH RESOLUTION LASER SPECTROSCOPY OF IRIDIUM MONOFLUORIDE AND IRIDIUM MONOCHLORIDE

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High resolution laser spectra of IrF and IrCl have been acquired in the visible region of the spectrum. The molecules were produced by laser ablation of an iridium target rod followed by reaction with 1% SF_6 or $CHCl_3$ seeded in He in a pulsed supersonic jet. The characterization and preliminary analysis of two electronic transitions of IrF, $A^3\Phi$ - $X^3\Phi$ and $B^3\Phi$ - $X^3\Phi$, observed by laser-induced fluorescence between 450 nm and 665 nm, were reported at this conference last year (paper MF11). However, the 3-0 band of the A-X system was perturbed and we present the results of the deperturbation and the final analysis here. New spectra of the IrCl molecule have been taken. A strong transition with an upper state vibrational progression between 530 to 575 nm has been observed. Dispersed fluorescence from the bands gives a ground state vibrational interval of approximately 413 cm^{-1}. Molecular constants for the excited and ground states which, like IrF, are consistent with a $^3\Phi_4$ - $X^3\Phi_4$ assignment, will be presented.