Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Collisional-Radiative modeling of plasma UV-VIS emission spectra[1] ANDREW TAYLOR, ALEXANDER HYDE, RICHARD KAMIENESKI, OLEG BATISHCHEV, Northeastern University/CIRCS — Numerical collisional-radiative (CR) models can theoretically derive the temperature and excited state population densities of interstellar and experimental plasmas. Non-invasive photoemission spectroscopy is an invaluable diagnostic technique to verify CR model predictions. He, Ar, and N_2 plasmas are created in vacuum tube, and emission is collected from 5mtorr to 20torr gas pressures. Effects of pressure on spectrum and population densities will be shown. We will discuss the CR modeling of various conditions and compare these simulations to the collected spectra.

[1]Work is supported by US DoD/ AFOSR Grants FA9550-10-1-0498 and FA2386-12-1-3006

Andrew Taylor
Northeastern University

Date submitted: 15 Nov 2013 Electronic form version 1.4