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November 25, 2010

Dr Sultana N Nahar
Senior Research Scientist
McPherson Laboratory
Department of Astronomy
The Ohio State University
140 W. 18th Ave
Columbus, OH 43210
USA.

Subject: Invitation for seminar

Dear Dr Nahar,

It is my pleasure to invite you to the Department of Physics, University of Rajshahi to visit us and present a seminar on your research on a mutually agreeable date of your convenience when you visit Bangladesh.

We hope your visit will also lead to renewed collaboration in research and other academic areas. We hope to hear from you soon in connection with your preferred date(s) for the seminar, proposed title etc.

We look forward to welcoming you at Rajshahi University.

Best regards,

M Mushfiqur Rahman

Professor and Chairman

You are cordially invited to a seminar
to be held in the Ahmad Hossain Gallery
Physics Department, University of Rajshahi

at 11:30 am
on Saturday, July 16, 2011

titled

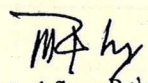
RELATIVISTIC EFFECTS IN LOW TEMPERATURE NEBULAR PLASMAS

by

Dr Sultana N Nahar
Department of Astronomy
Ohio State University, USA

Abstract

Electron-ion recombination is a dominant process in cooler nebular plasmas. Both the collisionally excited lines (CEL) and recombination line (REL) of O II are commonly detected. But a longstanding discrepancy of lower and higher oxygen abundance exists predicted from the RCL and CEL respectively. This is a puzzle since existent atomic parameters for O~II are known to be accurate. I will present the low energy photoionization and low temperature recombination of O II using the unified method based on relativistic Breit-Pauli R-matrix method and close coupling approximation. The study shows that the fine structure effects in the low temperature region, studied for the first time, cause considerable enhancement in electron-ion recombination rates. I will present detailed features and recombination rates at low temperature which are expected to narrow the gap of discrepancy in oxygen abundance in nebular plasmas.


Prof. M Mushfiqur Rahman
Chairman
Department of Physics
University of Rajshahi. 14.7.4