BOSTON UNIVERSITY

Astrophysics Seminar
Monday, March 14, 2016

Using the MALT90 Survey to Investigate Chemical Anomalies and to Compare Galactic to Extragalactic Star Formation

3:15 pm
Refreshments
CAS Room 500

3:30 pm
Seminar
CAS Room 502

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Abstract:

I will overview the MALT90 high-mass star formation survey, which used the Mopra 22-m telescope to map 16 molecular lines simultaneously toward over 3000 dense molecular clumps. I will particularly focus on two recent results. First, I will talk about high-mass star-forming clumps with anomalous N2H+/HCO+(1–0) integrated intensity ratios that are either unusually high or unusually low. Follow-up high resolution interferometer observations uncover why these clumps are extremely anomalous. The second result focuses on linking dense gas in the Milky Way to that in external galaxies. Particularly, I will show that the Gao-Solomon relation, which relates the star formation rate of galaxies to the quantity of dense gas, is not a simple summation of Galactic clumps. Instead the relation may be due to a large-scale universal initial mass function and clump mass function.

Next Week

- Prof. Ramesh Narayan
  Harvard University
- TBD

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