



Contribution ID: 302

Type: **Poster Presentation**

## **H $\alpha$ images of nearby galaxy groups; NGC 193 and NGC 940**

*Tuesday, 26 June 2018 15:00 (2 hours)*

A significant fraction of the baryons in galaxy groups and clusters is not locked up in stars and the interstellar medium (ISM), but exists in the form of extended multi-phase gas. The advantage of nearby galaxy groups is that this multi-phase gas can be studied via hot X-ray ( $\approx$ H $\alpha$  filaments) via optical emission line observations. Another advantage of groups is that the galaxies' heating process effects are more visible due to lower density and mass, containing few galaxies, as opposed to rich clusters. Interaction between the different phases is important for galaxy formation and evolution due to the fact that at least 50% of galaxies can be found in groups and clusters.

The Complete Local-Volume Groups Sample (CLoGS) is an optically selected sample of 53 groups within 80 Mpc of which the X-ray observations (Chandra / XMM-Newton) have already been done and can be used to infer important physical properties of galaxy groups, such as gas temperature and X-ray luminosity. In this project the H $\alpha$  images, observed using the WIYN 0.9m telescope on Kitt Peak, are analysed with the aim to compare the H $\alpha$  filaments to the X-ray emission images. Here we present preliminary results and a multi-wavelength comparison for two rich galaxy groups, where the central member is an X-ray bright radio galaxy with a powerful central jet, and , where the brightest member is an X-ray faint radio galaxy with only a weak radio point source.

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Prof. Ilani Loubser  
North-West University  
Ilani.Loubser@nwu.ac.za

**Primary authors:** Prof. BABUL, Arif (University of Victoria, Canada); Dr O'SULLIVAN, Ewan (Harvard-Smithsonian Centre for Astrophysics, USA); Prof. LOUBSER, Ilani (North-West University); Ms HATTINGH, Sumari

(North-West University)

**Presenter:** Ms HATTINGH, Sumari (North-West University)

**Session Classification:** Poster Session 1

**Track Classification:** Track D1 - Astrophysics