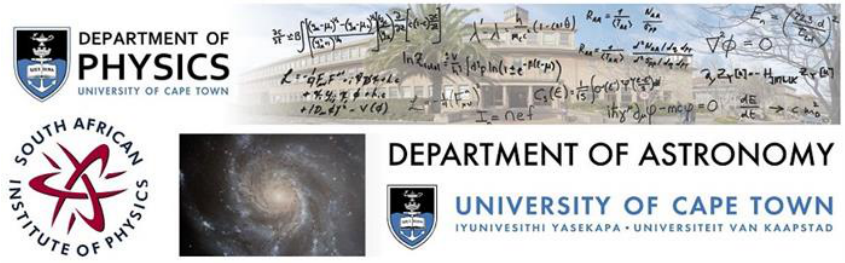

Contribution ID: **15** Type: **Poster Presentation**

Analysis of the rich optical iron-line spectrum of the x-ray variable I Zw 1 AGN 1H0707-495

Wednesday, 6 July 2016 16:10 (1h 50m)

Abstract content
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Thirty years ago the optical counterpart of the x-ray source 1H0707-495 was discovered to be a 15th magnitude broad-line Seyfert galaxy with a rich FeII emission line spectrum typical of the AGN subclass sometimes referred to as the I Zw 1 objects after their progenitor. This object became the subject of much interest and investigation just over five years ago when it was shown to have undergone dramatic x-ray luminosity variations. This paper presents an extensive series of medium resolution spectra recorded at the 1.9 m telescope at Sutherland in January 2016. Through co-adding the spectra, we are able to achieve a signal-to-noise hitherto not achieved for this object, allowing us to resolve individual FeII lines and measure their relative strengths and profiles to a degree of accuracy not previously available for this AGN. We provide possible physical interpretations of our measurements and investigate links between the spectral evidence collected in this study and the known x-ray behaviour.

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Session Classification: Poster Session (2)

Track Classification: Track D1 - Astrophysics