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From the Editor

The Active Galaxies Newsletter is produced monthly. The deadline for contributions is the last friday of the month. The Latex macros for submitting abstracts and dissertation abstracts are appended to each issue of the newsletter and are also available on the web page.

As always as editor of the newsletter I am very interested to hear any suggestions or feedback regarding the newsletter. So do not hesitate in emailing me your suggestions.

Many thanks for your continued subscription.

Rob Beswick

Abstracts of recently accepted papers

Properties of X-ray selected Broad Absorption Line Quasars

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Broad absorption line quasars (commonly termed BALQSOs) contain the most dramatic examples of AGN-driven winds. The high absorbing columns in these winds, $\sim 10^{24}$ cm^{-2}, ensure that BALQSOs are generally X-ray faint. This high X-ray absorption means that almost all BALQSOs have been discovered through optical surveys, and so what little we know about their X-ray properties is derived from very bright optically-selected sources. A small number of X-ray selected BALQSOs (XBALQSOs) have, however, recently been found in deep X-ray survey fields. In this paper we investigate the X-ray and rest-frame UV properties of five XBALQSOs for which we have obtained XMM-Newton EPIC X-ray spectra and deep optical imaging and spectroscopy. We find that, although the XBALQSOs have an α_{ox} steeper by ~ 0.5 than normal QSOs, their median α_{ox} is nevertheless flatter by 0.30 than that of a comparable sample of optically selected BALQSOs (OBALQSOs). We rule out the possibility that the higher X-ray to optical flux ratio is due to intrinsic optical extinction. We find that the amount of X-ray and UV absorption due to the wind in XBALQSOs is similar, or perhaps greater than, the corresponding wind absorption in OBALQSOs, so the flatter α_{ox} cannot be a result of weaker wind absorption. We conclude that these XBALQSOs have intrinsically higher X-ray to optical flux ratios than the OBALQSO sample with which we compare them.

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E-mail contact: ajb@ast.cam.ac.uk,
preprint available at http://uk.arxiv.org/abs/0808.2414

The Mass of the Black Hole in the Quasar PG 2130+099

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We present the results of a recent reverberation-mapping campaign undertaken to improve measurements of the radius of the broad line region and the central black hole mass of the quasar PG 2130+099. Cross correlation of the 5100 Å continuum and Hβ emission-line light curves yields a time lag of $22.9^{+4.4}_{-4.3}$ days, corresponding to a central black hole mass $M_{\rm BH} = (3.8 \pm 1.5)\times10^7 M_\odot$. This value supports the notion that previous measurements yielded an incorrect lag. We re-analyzed previous datasets to investigate the possible sources of the discrepancy and conclude that previous measurement errors were apparently caused by a combination of undersampling of the light curves and long-term secular changes in the Hβ emission-line equivalent width. With our new measurements, PG 2130+099 is no longer an outlier in either the $R_{\rm BLR}$–L or the $M_{\rm BH}$–σ_* relationships.

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Constraining the AGN Contribution in a Multiwavelength Study of Seyfert Galaxies

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We have studied the relationship between the high- and low-ionization [O IV] $\lambda25.89$ μm, [Ne III] $\lambda15.56$ μm and [Ne II] $\lambda12.81$ μm emission lines with the aim of constraining the active galactic nuclei (AGN) and star formation contributions for a sample of 103 Seyfert galaxies. We used the [O IV] and [Ne II] emission as tracers for the AGN power and star formation to investigate the ionization state of the emission-line gas. We find that Seyfert 2 galaxies have, on average, lower [O IV]/[Ne II] ratios than those of Seyfert 1 galaxies. This result suggests two possible scenarios: 1) Seyfert 2 galaxies have intrinsically weaker AGN, or 2) Seyfert 2 galaxies have relatively higher star formation rates than Seyfert 1 galaxies. We estimate the fraction of [Ne II] directly associated with the AGN and find that Seyfert 2 galaxies have a larger contribution from star formation, by a factor of ~ 1.5 on average, than what is found in Seyfert 1 galaxies. Using the stellar component of [Ne II] as a tracer of the current star formation we found similar star formation rates in Seyfert 1 and Seyfert 2 galaxies. We examined the mid- and far-infrared continua and find that [Ne II] is well correlated with the continuum luminosity at 60μm and that both [Ne III] and [O IV] are better correlated with the 25μm luminosities than with the continuum at longer wavelengths, suggesting that the mid-infrared continuum luminosity is dominated by the AGN, while the far-infrared luminosity is dominated by star formation. Overall, these results test the unified model of AGN, and suggest that the differences between Seyfert galaxies cannot be solely due to viewing angle dependence.

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DRAFT is available at http://arxiv.org/abs/0808.4154

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Jobs

X-ray and Multiwavelength AGN Research Postdoc

with Martin Elvis

Harvard-Smithsonian Center for Astrophysics

Applications are invited for an Astrophysicist to join our High Energy Astrophysics Division.

The successful applicant will work with Dr. Martin Elvis on a variety of projects which may include X-ray data reduction and analysis from Suzaku, XMM, Chandra and other missions, optical observing and analysis, modelling of AGNs, and the study of AGN properties. The successful candidate will also interact with other CfA researchers on related topics.

Candidates must possess a PhD or equivalent in astronomy, physics, astrophysics, or a related field, or comparable experience. Candidates should also have experience in observation and analysis of X-ray data, experience with surveys, catalogs, and a strong scientific interest in working in this area. Experience with data analysis at optical or other wavelengths is also desirable.

This position will be for two years initially, with possible extension subject to future funding levels.

Interested candidates should forward curriculum vitae, bibliography, and names, addresses, telephone numbers, and email addresses of three professional references to:

Martin Elvis, elvis@cfa.harvard.edu

by January 15 2009.

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N.B. This advert will appear in the AAS Job Register from October to December 2008.

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