Active Galaxies Newsletter	*An electronic publication dedicated to the observation and theory of active galaxies*
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Accepted Abstracts - Submitted Abstracts - Thesis Abstracts
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From the Editor

Welcome to all the new subscribers, and thanks to everyone who contributed to this issue of the Active Galaxies Newsletter.

This newsletter is intended to disseminate paper abstracts, meeting announcements, job adverts and other information which may be of interest to the active galaxies community. It is produced monthly and, whilst the deadline for contributions is the last day of the month, contributions may be submitted at any time.

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. Please note that the editor may reject submissions which do not use the template. As always, any suggestions or feedback regarding the newsletter are welcome.

Thanks for your continued subscription.

Megan Argo

Abstracts of recently accepted papers

New insights in the spectral variability and physical consditions of the X-ray absorbers in NGC 4151

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We investigate the relationship between the long term X-ray spectral variability in the Seyfert 1.5 galaxy NGC 4151 and its intrinsic absorption, by comparing the 2014 simultaneous ultraviolet/X-Ray observations taken with *Hubble STIS Echelle* and *Chandra HETGS* with archival observations from *Chandra*, *XMM-Newton* and *Suzaku*. The observations are divided into "high" and "low" states, with the low states showing strong and unabsorbed extended emission at energies below 2 keV. Our X-ray model consists of a broken powerlaw, neutral reflection and the two dominant absorption components identified by Kraemer et al (2005), hereafter KRA2005, X-High and D+Ea, which are present in all epochs. The model fittings suggest that the absorbers are very stable, with the principal changes in the intrinsic absorption resulting from variations in the ionization state of the gas as the ionizing continuum varies. However, the low states show evidence of larger column densities in one or both of the absorbers. Among plausible explanations for the column increase, we discuss the possibility of an expanding/contracting X-ray corona. As suggested by KRA2005, there seem to be contributions from magnetohydrodynamic (MHD) winds to the mass outflow. Along with the ultra fast outflow absorber identified by Tombesi et al. (2010), X-High is consistent with being magnetically driven. On the other hand, it is unlikely that D+Ea is part of the MHD flow, and it is possible that it is radiatively accelerated. These results suggest that at a sufficiently large radial distance there is a break point between MHD-dominated and radiatively driven outflows.

Accepted by the Astrophysical Journal

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E-print available at http://arxiv.org/abs/1610.05689

X-ray flaring in PDS 456 observed in a high-flux state

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We present an analysis of a 190 ks (net exposure) *Suzaku* observation, carried out in 2007, of the nearby ($z = 0.184$) luminous ($L_{\rm bol} \sim 10^{47}\,{\rm erg\,s^{-1}}$) quasar PDS 456. In this observation, the intrinsically steep bare continuum is revealed compared to subsequent observations, carried out in 2011 and 2013, where the source is fainter, harder and more absorbed. We detected two pairs of prominent hard and soft flares, restricted to the first and second half of the observation respectively. The flares occur on timescales of the order of ~ 50 ks, which is equivalent to a light-crossing distance of $\sim 10\,R_{\rm g}$ in PDS 456. From the spectral variability observed during the flares, we find that the continuum changes appear to be dominated by two components: (i) a variable soft component (< 2 keV), which may be related to the Comptonized tail of the disc emission, and (ii) a variable hard power-law component (> 2 keV). The photon index of the latter power-law component appears to respond to changes in the soft band flux, increasing during the soft X-ray flares. Here the softening of the spectra, observed during the flares, may be due to Compton cooling of the disc corona induced by the increased soft X-ray photon seed flux. In contrast, we rule out partial covering absorption as the physical mechanism behind the observed short timescale spectral variability, as the timescales are likely too short to be accounted for by absorption variability.

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Preprint available at http://arxiv.org/abs/1610.04017

The complex, dusty narrow-line region of NGC 4388: Gas-jet interactions, outflows, and extinction revealed by near-IR spectroscopy

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We present Gemini/GNIRS spectroscopy of the Seyfert 2 galaxy NGC 4388, with simultaneous coverage from 0.85 - 2.5 μm. Several spatially-extended emission lines are detected for the first time, both in the obscured and unobscured portion of the optical narrow line region (NLR), allowing us to assess the combined effects of the central continuum source, outflowing gas and shocks generated by the radio jet on the central 280 pc gas. The H I and [Fe II] lines allow us to map the extinction affecting the NLR. We found that the nuclear region is heavily obscured, with E(B-V) $\sim$1.9 mag. To the NE of the nucleus and up to $\sim$150 pc, the extinction remains large, $\sim$1 mag or larger, consistent with the system of dust lanes seen in optical imaging. We derived position-velocity diagrams for the most prominent lines as well as for the stellar component. Only the molecular gas and the stellar component display a well-organized pattern consistent with disk rotation. Other emission lines are kinematically perturbed or show little evidence of rotation. Extended high-ionization emission of sulfur, silicon and calcium is observed to distances of at least 200 pc both NE and SW of the nucleus. We compared flux ratios between these lines with photoionization models and conclude that radiation from the central source alone cannot explain the observed high-ionization spectrum. Shocks between the radio-jet and the ambient gas are very likely an additional source of excitation. We conclude that NGC 4388 is a prime laboratory to study the interplay between all these mechanisms.

Accepted by MNRAS

E-mail contact: aardila@lna.br
Preprint available at http://arxiv.org/abs/1610.03925

Meetings

LSST AGN Science Collaboration Roadmap Development Meeting

Grapevine, TX, USA
January 3, 2017

Webpage: `https://agn.science.lsst.org/meetings`
Email: `ohad@unt.edu`

We are happy to announce the "LSST AGN Science Collaboration Roadmap Development Meeting", an Open Splinter Meeting as part of the 229th American Astronomical Society (AAS) Meeting, Grapevine, TX, kindly supported by the LSST Corporation.

The goals of the meeting are to:

1. start the development of a comprehensive Roadmap for the AGN Science Collaboration of the Large Synoptic Survey Telescope (LSST), presenting a coherent vision for AGN research pre- and post-LSST commissioning
2. form dedicated Working Groups within the Science Collaboration who will work on specific projects described by the Roadmap
3. explore funding opportunities to support the highest-ranked projects described by the Roadmap
4. encourage eligible active extragalactic researchers to join the AGN Science Collaboration.

Program and venue details are available at:

`https://agn.science.lsst.org/meetings`
(please note: no login is required; please ignore the USER LOGIN box)

Information about registration to the 229th AAS Meeting is available at:

`https://aas.org/meetings/aas229/registration`

Travel and lodging information is available at:

`https://aas.org/meetings/aas229/travel-and-lodging`

Radio Galaxies in the Local Universe

Royal Astronomical Society Lecture Theatre, London
Friday 9th December 2016 (1030 – 1530)

Webpage: `http://www.star.ucl.ac.uk/ mmarcha/RAS9dec016.html`
Email: `Ian Browne (ian.browne@manchester.ac.uk), Maria Marcha (maria.marcha@gmail.com) or Clive Tadhunter (c.tadhunter@sheffield.ac.uk)`

The study of radio galaxies in the local universe gives us an opportunity to get a close up view of key physical processes that helped shape their hosts and other galaxies. In the last few years new instruments like the JVLA, e-MERLIN, LOFAR, VLT, Spitzer, Herschel, etc. have greatly expanded our view of these fascinating objects. It is timely to have a discussion meeting to explore how the new results impact on questions like how jets produce feedback to their local environment, how unification models stand up now that there is much extensive statistical information with which to test them, what radio relics tell us about the past history of galaxies and clusters, and even the origin of the highest energy cosmic rays.

Special Announcements

Nature Astronomy is open for submissions

November 2016

Nature Astronomy is a truly multidisciplinary journal, launching in January 2017. It will represent and foster closer interaction between all of the key astronomy-relevant disciplines. As a Nature Research journal, it will publish the most significant research, review and comment at the cutting edge of astronomy, astrophysics, cosmology and planetary science.

Nature Astronomy will offer a range of content types including original research, Review Articles, Perspectives, Commentaries, News & Views and Research Highlights to explore topical issues as well as showcasing significant advances in the field.

Publication in Nature Astronomy is free of charge, and its publication policy allows the posting of submitted manuscripts on preprint servers, and the self-archiving of the published versions of papers six months after publication.

Please visit the Nature Astronomy website for more information and to submit a manuscript: nature.com/natureastronomy