Active Galaxies Newsletter	*An electronic publication dedicated to the observation and theory of active galaxies*
No. 195 — February 2014	Editor: Megan Argo (agnews@manchester.ac.uk)

Accepted Abstracts - Submitted Abstracts - Thesis Abstracts
Jobs Adverts - Meetings Adverts - Special Announcements

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. As always, any suggestions or feedback regarding the newsletter are welcome.

Many thanks for your continued subscription.

Megan Argo

Abstracts of recently accepted papers

Probing the origin of the iron Kα line around stellar and supermassive black holes using X-ray polarimetry

F. Marin and F. Tamborra

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Asymmetric, broad iron lines are a common feature in the X-ray spectra of both X-ray binaries (XRBs) and type-1 Active Galactic Nuclei (AGN). It was suggested that the distortion of the Fe Kα emission results from Doppler and relativistic effects affecting the radiative transfer close to the strong gravitational well of the central compact object: a stellar mass black hole (BH) or neutron star (NS) in the case of XRBs, or a super massive black hole (SMBH) in the case of AGN. However, alternative approaches based on reprocessing and transmission of radiation through surrounding media also attempt to explain the line broadening. So far, spectroscopic and timing analyzes have not yet convinced the whole community to discriminate between the two scenarios. Here we study to which extent X-ray polarimetric measurements of black hole X-ray binaries (BHXRBs) and type-1 AGN could help to identify the possible origin of the line distortion. To do so, we report on recent simulations obtained for the two BH flavors and show that the proposed scenarios are found to behave differently in polarization degree and polarization angle. A relativistic origin for the distortion is found to be more probable in the context of BHXRBs, supporting the idea that the same mechanism should lead the way also for AGN. We show that the discriminating polarization signal could have been detectable by several X-ray polarimetry missions proposed in the past.

Accepted by ASR

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Preprint available at http://adsabs.harvard.edu/abs/2013arXiv1309.1684M

Statistical Properties of Multi-epoch Spectral Variability of SDSS Stripe 82 Quasars

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We investigate the UV−optical (longward of Lyα 1216Å) spectral variability of nearly 9000 quasars ($0 < z < 4$) using multi-epoch photometric data within the SDSS Stripe 82 region. The regression slope in the flux−flux space of a quasar light curve directly measures the color of the flux difference spectrum, then the spectral shape of the flux difference spectra can be derived by taking a careful look at the redshift dependence of the regression slopes. First, we confirm that the observed quasar spectrum becomes bluer when the quasar becomes brighter. We infer the spectral index of the composite difference spectrum as $\alpha_\nu^{\rm dif} \sim +1/3$ (in the form of $f_\nu \propto \nu^{\alpha_\nu}$), which is significantly bluer than that of the composite spectrum $\alpha_\nu^{\rm com} \sim -0.5$. We also show that the continuum variability cannot be explained by the accretion disk models with varying mass accretion rate. Second, we examine the effects of broad emission line variability on the color−redshift space. The variability of the "Small Blue Bump" is extensively discussed. We show that the low-ionization lines of MgII and FeII are less variable compared to Balmer emission lines and high-ionization lines, and the Balmer continuum is the dominant variable source around $\sim$ 3000Å. These results are compared with previous studies, and the physical mechanisms of the variability of the continuum and emission lines are discussed.

Accepted by The Astrophysical Journal

E-mail contact: mkokubo at ioa.s.u-tokyo.ac.jp
Preprint available at http://arxiv.org/abs/1401.5074

Exploratory X-ray Monitoring of Luminous Radio-Quiet Quasars at High Redshift: Initial Results

Ohad Shemmer[1], W. N. Brandt[2,3], Maurizio Paolillo[4,5], Shai Kaspi[6,7], Cristian Vignali[8], Matthew S. Stein[1], Paulina Lira[9], Donald P. Schneider[2,3], and Robert R. Gibson[10]

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We present initial results from an exploratory X-ray monitoring project of two groups of comparably luminous radio-quiet quasars (RQQs). The first consists of four sources at $4.10 \leq z \leq 4.35$, monitored by *Chandra*, and the second is a comparison sample of three sources at $1.33 \leq z \leq 2.74$, monitored by *Swift*. Together with archival X-ray data, the total rest-frame temporal baseline spans $\sim 2-4$ yr and $\sim 5-13$ yr for the first and second group, respectively. Six of these sources show significant X-ray variability over rest-frame timescales of $\sim 10^2 - 10^3$ d; three of these also show significant X-ray variability on rest-frame timescales of $\sim 1 - 10$ d. The X-ray variability properties of our variable sources are similar to those exhibited by nearby and far less luminous active galactic nuclei (AGNs). While we do not directly detect a trend of increasing X-ray variability with redshift, we do confirm previous reports of luminous AGNs exhibiting X-ray variability above that expected from their luminosities, based on simplistic extrapolation from lower luminosity sources. This result may be attributed to luminous sources at the highest redshifts having relatively high accretion rates. Complementary UV-optical monitoring of our sources shows that variations in their optical-X-ray spectral energy distribution are dominated by the X-ray variations. We confirm previous reports of X-ray spectral variations in one of our sources, HS 1700+6416, but do not detect such variations in any of our other sources in spite of X-ray flux variations of up to a factor of ~ 4. This project is designed to provide a basic assessment of the X-ray variability properties of RQQs at the highest accessible redshifts that will serve as a benchmark for more systematic monitoring of such sources with future X-ray missions.

Accepted by The Astrophysical Journal

E-mail contact: ohad@unt.edu,
Preprint available at http://arxiv.org/abs/1401.5496

Morphologies of z∼0.7 AGN Host Galaxies in CANDELS: No trend of merger incidence with AGN luminosity

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The processes that trigger Active Galactic Nuclei (AGN) remain poorly understood. While lower luminosity AGN may be triggered by minor disturbances to the host galaxy, stronger disturbances are likely required to trigger luminous AGN. Major wet mergers of galaxies are ideal environments for AGN triggering since they provide large gas supplies and galaxy scale torques. There is however little observational evidence for a strong connection between AGN and major mergers. We analyse the morphological properties of AGN host galaxies as a function of AGN and host galaxy luminosity and compare them to a carefully matched sample of control galaxies. AGN are X-ray selected in the redshift range $0.5 < z < 0.8$ and have luminosities $41 < \log(L_X\ [\mathrm{erg/s}]) < 44.5$. 'Fake AGN' are simulated in the control galaxies by adding point sources with the magnitude of the matched AGN. We find that AGN host and control galaxies have comparable assymetries, Sersic indices and ellipticities at restframe ∼950nm. AGN host galaxies show neither higher average asymmetries nor higher fractions of very disturbed objects. There is no increase in the prevalence of merger signatures with AGN luminosity. At 95% confidence we find that major mergers are responsible for <6% of all AGN in our sample as well as <40% of the highest luminosity AGN ($\log(L_X\ [\mathrm{erg/s}]) \sim 43.5$). Major mergers therefore either play only a very minor role in the triggering of AGN in the luminosity range studied or time delays are too long for merger features to remain visible.

Accepted for publication in MNRAS

E-mail contact: cv21@st-andrews.ac,uk,
Preprint available at http://arxiv.org/abs/1401.5477

Meetings

IAU Symposium 313: Extragalactic Jets from every angle

Galapagos Islands, Ecuador
15-19 September 2014

Webpage: http://iau313ecuador.epn.edu.ec
Email: iausymp313@gmail.com

Dear Colleague,

We are pleased to announce that the abstract submission and registration for the IAU Symposium 313: "Extragalactic Jets from every angle" is now open.

We would like to remind you that we can comfortably arrange about 10 contributed talks per day, 20 min duration each (15 min talk + 5 min discussion and questions) to have at least 45 contributed talks allowed in our schedule.

All the information can be found at the conference website:
http://iau313ecuador.epn.edu.ec/skills.html (REGISTRATION)
http://iau313ecuador.epn.edu.ec/abstract.html (ABSTRACT SUBMISSION)

IMPORTANT DATES

- November 1st .... IAU Grant Application Open.
- December 1st .... Abstract submission and registration open
- February 1st .... IAU Grant Application Close.
- March 1st .... Deadline for abstract submission
- March 1st .... IAU Grant Notification to Applicants.
- March 23st .... Notification to authors

ACCOMMODATION AND TRAVEL
The conference venue is a highly touristic place visited by thousands of tourists during the year, thus the town of Puerto Ayora has well developed hotels and hostel services. The LOC have been reserved rooms for the participants in several Hotels in Puerto Ayora, this information is available on the Symposium webpage.

The LOC is currently working on arranging special rates with the main hotels on the island to facilitate people that are attending the meeting. We strongly recommend colleagues that are planning to attend the conference to buy their flight tickets really in advance to avoid increase of airfares due to last minute booking.

SCIENTIFIC RATIONALE
Extragalactic jets provide the direct observational evidence for a connection between supermassive black holes and surrounding cosmic environment. They deliver the energy released by an accreting black hole to large distances and impact the formation and evolution of surrounding structures. The significance of relativistic jets is visible on many physical scales and in a variety of astrophysical sources. They carry information about the black hole power, spin, accretion state and characteristic timescales, and probe the environment beyond the black hole's immediate sphere of influence.

In recent years, both space and ground based telescopes are providing new insights to investigate jet physics. New data on jets have been accumulating from space missions such as Swift, XMM-Newton, Chandra, Suzaku, Fermi, Hubble, Spitzer and WISE. Upgraded and future ground based facilities such as JVLA, ATCA, ALMA, LOFAR and SKA will provide higher quality data at both the lowest and highest radio frequencies. At higher energies, the atmospheric Cherenkov telescopes, HESS, MAGIC, and VERITAS have provided evidence indicating rapid time variability in jets, and in the future these facilities will be augmented by CTA. Although we are now living in a "golden age" and despite the recent progress, many new and unsolved problems specific to the physical mechanisms underlying jet physics are still under debate.

This is an excellent time to bring together observational astronomers working across the electromagnetic spectrum with theorists to address the pressing questions concerning our understanding of the physics of relativistic jets. The open questions to be addressed include unification scenarios for blazars and radio galaxies, the interactions between jets and their environments, the composition and structure of jets and the mechanisms leading to their collimation, the role of magnetic fields, the mechanisms of particle acceleration in jets, the location of high-energy emission sites, and the scaling of physical jet phenomena with black-hole mass, from Galactic to extragalactic sources.

These are the topics that will be addressed in the IAU Symposium 313: "Extragalactic Jets from every angle".

AGN versus star formation: the fate of the gas in galaxies

Duham, UK
28th July - 1st August 2014

Webpage: `http://astro.dur.ac.uk/AGNvsSF/`
Email: `agn.sf@durham.ac.uk`

We are pleased to announce an international workshop in Durham, England, over 28th July-1st August 2014 on: "AGN vs star formation: the fate of the gas in galaxies". See below for more details. If you are interested in attending the workshop then please register and/or submit an abstract by 14th March at http://astro.dur.ac.uk/AGNvsSF/. The majority of the scientific programme will be based on submitted talk abstracts and will be announced in early April. SOC: David Alexander, Ryan Hickox, Tom Theuns, Almudena Alonso-Herrero, Frederic Bournaud, Ric Davies, Raffaella Morganti, James Mullaney, Rachel Somerville LOC: James Aird, Ady Annuar, Richard Bower, Agnese Del Moro, Poshak Gandhi, Chris Harrison, George Lansbury, Manolis Rovilos, Flora Stanley, Mark Swinbank Please address email enquiries to agn.sf@durham.ac.uk

AGN versus star formation: the fate of the gas in galaxies How is AGN activity connected to star formation? This remains one of the key unsolved questions in astronomy and cosmology. Both processes are efficiently driven by a cold gas supply and we should therefore expect a loose connection. However, a slew of empirical and theoretical evidence suggest an unexpectedly tight symbiotic link between AGN activity and star formation, whereby the fuelling and regulation of one process is dictated by the other. The effectiveness of this fuelling and regulation and (most crucially) whether it is predominantly dictated by AGN activity or star formation is a matter is intense debate, and has important implications for the growth of galaxies and black holes over cosmic time.

The objective of this international workshop is to bring together observers and theorists to discuss the connection between AGN activity and star formation on small (¡100 pc), large (0.1-10 kpc), and cosmological scales to address the following key questions:

- How does star formation and AGN activity compete for cold gas?
- What evidence is there for a symbiotic connection between AGN activity and star formation?
- Do star formation processes drive AGN activity?
- What impact does AGN activity have on star formation?
- How different would the Universe look without AGNs?
- What key tests and observations do we need to make progress?

The AGN versus star formation workshop will be held in the historical city of Durham in England over 28th July-1st August 2014. A significant fraction of the workshop programme will be devoted to discussion. Places at the workshop will be limited to 70 participants and interested participants are encouraged to register and/or submit abstracts as soon as possible.

This workshop builds on the science covered in our previous Durham-Dartmouth workshops: "What Drives the Growth of Black Holes?" at Durham in 2010 (see Alexander & Hickox 2012) and "Black-hole Feedback: What is the role of AGN in the evolution of galaxies?" at Dartmouth in 2012.

The deadline for abstracts is 14th March 2014 to allow the workshop programme to be announced in early April. A registration fee of 225 GBP will cover the five days of the workshop, including lunches and the BBQ on the final day. For more details see the workshop web site at http://astro.dur.ac.uk/AGNvsSF/. Please address email enquiries to agn.sf@durham.ac.uk

Special Announcements

Fizeau exchange visitors program - call for applications

2014-01-30

The Fizeau exchange visitors program in optical interferometry funds (travel and accommodation) visits of researchers to an institute of his/her choice (within the European Community) to perform collaborative work and training on one of the active topics of the European Interferometry Initiative. The visits will typically last for one month, and strengthen the network of astronomers engaged in technical, scientific and training work on optical/infrared interferometry. The program is open for all levels of astronomers (Ph.D. students to tenured staff). Applicants are strongly encouraged to seek also partial support from their home or host institutions.

The **deadline for applications is March 15**. Fellowships can be awarded for missions starting in May 2014.

Further informations and application forms can be found at www.european-interferometry.eu

The program is funded by OPTICON/FP7.

Please distribute this message also to potentially interested colleagues outside of the your community!

Looking forward to your applications,
Josef Hron & Laszlo Mosoni
(for the European Interferometry Initiative)

E-mail contact: fizeau@european-interferometry.eu

Jobs

RESEARCH FELLOW IN ASTROPHYSICAL SPECTRAL MODELLING

School of Mathematics and Physics, Queen's University Belfast

Deadline: 24 FEBRUARY 2014

Email contact: f.keenan@qub.ac.uk

Further Information: http://www.qub.ac.uk/sites/QUBJobVacancies/OtherJobs/ResearchJobs

Applications are invited for a Postdoctoral Research Fellowship position in the area of Astrophysical Spectral Modelling for up to 3 years in the first instance. The post is located in the Centre for Theoretical Atomic, Molecular and Optical Physics (CTAMOP) within the School of Mathematics and Physics, and is a collaborative project between staff in CTAMOP and in the Astrophysics Research Centre (ARC), also located in the School. The successful candidate will work on the use of theoretical atomic physics calculations, generated at Queens University, to analyse the spectra of a range of astrophysical sources.

Applicants must have a PhD in Astrophysics either awarded or submitted by the time of taking up the post. Experience is essential in the modelling of the spectra of astrophysical sources, as are a number of high quality refereed publications in the research field commensurate with stage of career. Experience in the use of the Cloudy spectral modelling code, as is some experience in theoretical atomic physics, are desirable.

An application pack for the post, containing further details and guidelines on how to submit your application online, is available at:

http://www.qub.ac.uk/sites/QUBJobVacancies/OtherJobs/ResearchJobs/

under post reference 14/103115.

Informal enquiries may be directed to Prof Francis Keenan (telephone: +44 2890 973686; email: f.keenan@qub.ac.uk) or Dr Catherine Ramsbottom (telephone: +44 2890 976047; email: c.ramsbottom@qub.ac.uk).

Salary: £30,728 - £35,597 per annum.