Active Galaxies Newsletter	*An electronic publication dedicated to the observation and theory of active galaxies*
No. 35 — February 2000	Editor: Matt Redman (mpr@ast.man.ac.uk)

Abstracts - Thesis Abstracts - Jobs - Meetings

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.
Matt Redman

Abstracts of recently accepted papers

Determination of the Central Mass in AGNs Using Cross-Correlation Lags and Velocity Dispersions

Michael J. Fromerth[1] and Fulvio Melia[2]

[1] Physics Department, The University of Arizona, Tucson, AZ 85721
[2] Physics Department and Steward Observatory, The University of Arizona, Tucson, AZ 85721

We estimate the mass M of the central object in five Active Galactic Nuclei (AGNs) using the most recent reverberation data obtained by the AGN Watch consortium. The cross-correlation function (CCF) centroids of the broad Lyα λ1216 and C_{IV} λ1549 lines are used to estimate the size of the broad line region (BLR) in these sources. We calculate the velocity dispersions of these lines in the root mean square (rms) spectra, and then use our results to estimate M. We argue that our technique of calculating the velocity dispersion should work in the general case of an arbitrary line profile, unlike methods that depend on the measurement of the full-width at half-maximum (FWHM) of the broad line. We also show that our results agree with the FWHM method in the limit of a normal (Gaussian) line profile. The masses calculated from the more reliable C_{IV} λ1549 data are: $M/10^7 M_\odot = 53^{+23}_{-15}$ (3C 390), 12^{+10}_{-10} (Fairall 9), $1.3^{+0.8}_{-0.5}$ (NGC 3783), $5.5^{+3.3}_{-2.9}$ (NGC 5548), and $0.83^{+0.49}_{-0.45}$ (NGC 7469). These masses are considerably smaller than those calculated with the previous generation of reverberation data.

Accepted by Astrophys. J.

E-mail contact: fromerth@physics.arizona.edu

Young and Intermediate Stellar population in Seyfert 2 galaxies

Rosa M. González Delgado[1], Timothy Heckman[2] and Claus Leitherer[3]

[1] Instituto de Astrofisica de Andalucia (CSIC), Granada, Spain
[2] Department of Physics and Astronomy, JHU, Baltimore, USA
[3] Space Telescope Science Institute, Baltimore, USA

We present and discuss near-ultraviolet and optical ground-based spectra of the 20 brightest Seyfert 2 nuclei, and HST ultraviolet images and ultraviolet spectroscopy for a few of them. The goal is to study the starburst-AGN connection and the origin of the featureless continuum. The results indicate that half of the nuclei in the sample harbor a young and/or intermediate age population. These stars are formed in powerful and dusty starbursts of short duration, that have bolometric luminosities similar to the estimated bolometric luminosities of their obscured Seyfert 1 nuclei.

Proceedings of the session "AGN in their Cosmic Enviroment" of the JENAM Conference (Toulouse, September 1999). EDPS Conference Series in Astronomy & Astrophysiscs

E-mail contact: rosa@iaa.es,
preprint available at http://www.iaa.csic.es/~rosa or in astro-ph/0001104

The X-ray Properties of $z > 4$ Quasars

Shai Kaspi, W. N. Brandt, and Donald P. Schneider

Department of Astronomy and Astrophysics, 525 Davey Laboratory, Pennsylvania State University, University Park, PA, 16802, USA

We report on a search for X-ray emission from quasars with redshifts greater than four using the *ROSAT* public database. Our search has doubled the number of $z > 4$ quasars detected in X-rays from 6 to 12. Most of those known prior to this work were radio-loud and X-ray selected sources; our study increases the number of X-ray detected, optically selected $z > 4$ quasars from one to seven. We present their basic X-ray properties and compare these to those of lower redshift quasars. We do not find any evidence for strong broad-band spectral differences between optically selected $z > 4$ quasars and those at lower redshifts.

Accepted by The Astronomical Journal

E-mail contact: shai@astro.psu.edu,
preprint available at http://arXiv.org/abs/astro-ph/0001299

HST Observations and Photoionization Modeling of the LINER Galaxy NGC 1052

Jack R. Gabel[1], Fred C. Bruhweiler[1], D. Michael Crenshaw[1], Steven B. Kraemer,[1] and Cherie L. Miskey[1]

[1] The Catholic University of America, Dept. of Physics, 620 Michigan Ave NE, Washington, DC 20064

We present a study of available *Hubble Space Telescope (HST)* spectroscopic and imaging observations of the low ionization nuclear emission line region (LINER) galaxy NGC 1052. The WFPC2 imagery clearly differentiates extended nebular Hα emission from that of the compact core. Faint Object Spectrograph (FOS) observations provide a full set of optical and UV data (1200-6800 $\AA$). These spectral data sample the innermost region (0."86 $\times$ 0."86 $\sim$ 82pc $\times$ 82pc) and exclude the extended Hα emission seen in the WFPC2 image. The derived emission line fluxes allow a detailed analysis of the physical conditions within the nucleus. The measured flux ratio for Hα/Hβ, $F_{H\alpha}/F_{H\beta} = 4.53$, indicates substantial intrinsic reddening, E(B-V)=0.42, for the nuclear nebular emission. This is the first finding of a large extinction of the nuclear emission line fluxes in NGC 1052. If the central ionizing continuum is assumed to be attenuated by a comparable amount, then the emission line fluxes can be reproduced well by a simple photoionization model using a central power law continuum source with a spectral index of $\alpha = -1.2$ as deduced from the observed flux distribution. A multi-density, dusty gas gives the best fit to the observed emission line spectrum. Our calculations show that the small contribution from a highly ionized gas observed in NGC 1052 can also be reproduced solely by photoionization modeling. The high gas covering factor determined from our model is consistent with the assumption that our line of sight to the central engine is obscured.

Accepted by The Astrophysical Journal

E-mail contact: gabel@iacs.gsfc.nasa.gov,
preprint is astro-ph/0001346

Extended Gas in Seyfert Galaxies: Near-Infrared Observations of 15 Active Nuclei

Cláudia Winge[1,2,3], Thaisa Storchi-Bergmann[1,2], Martin J. Ward[2,4] and Andrew S. Wilson[2,5,6]

[1] Instituto de Física, UFRGS, Av. Bento Gonçalves, 9500, C.P. 15051. CEP 91501-970, Porto Alegre, RS, Brazil.
[2] Visiting Astronomer at the Cerro Tololo Interamerican Observatory, operated by the Association of Universities for Research in Astronomy, Inc. under contract with the National Science Foundation
[3] CNPq Fellow
[4] Dept. of Physics and Astronomy, University of Leicester, University Road, Leicester LE1 7RH, England]
[5] Astronomy Program, University of Maryland, College Park, MD 20742, USA [6] Space Telescope Science Institute, 3700 San Martin Dr., Baltimore, MD 21218, USA

Results from an analysis of low resolution (R$\sim$250) near-IR long-slit spectra covering simultaneously the I, J, H, and K bands, for a sample of 15 Seyfert galaxies and the NGC 5253 starburst nucleus, are presented. The Seyfert galaxies were selected as presenting 'linear' or cone-like high excitation emission line in the optical, most probably due to the collimation of the central source's radiation by a dusty molecular torus. Our goal was to look for signatures of this torus, and to investigate the gaseous distribution, excitation and reddening. The strongest emission lines detected are usually He I 1.083μm and [S III] λ9532, followed by Paβ. In some cases, [Fe II] 1.26μm and 1.64μm are also seen. [Fe II] 1.26μm and H_2 ν=1−0 S(1) are detected in some of the higher resolution spectra obtained for five galaxies. The emission lines are spatially extended in most cases, and we have used the [Fe II]/Paβ ratio as a measure of the gaseous excitation in Mrk 573, NGC 1386, and NGC 7582. Values for this ratio between 1.5 and 6 are found, suggesting excitation of [Fe II] by X-rays or shock waves in some regions. Broad permitted lines are observed in three Seyfert 1 galaxies. Nuclear Paβ in NGC 1365, and possibly nuclear Brγ in Mrk 573, are also broad.

From analysis of the spatial distribution of the continuum $(J-H)$ and $(H-K)$ colours derived from our spectra, we find redder colours for the nucleus than the nearby bulge in most of the Seyfert 2s observed. Comparison with models including emission from dust and stars shows that hot (T $\sim$ 1000 K) dust emission dominates the nuclear continuum in NGC 1365, NGC 2110, NGC 3281, NGC 7582, and ESO362-G18. In NGC 1386, NGC 5643, and NGC 5728 the main contributor is the underlying stellar population, combined with some foreground reddening and/or cooler dust emission. In a few cases, the $(J-H)$ colours on opposite sides of the nucleus differ by 0.3 – 0.8 mag, an effect that we interpret as partly due to differences in the local stellar population, and possibly extinction gradients.

Accepted by Monthly Notices of the R.A.S

E-mail contact: winge@if.ufrgs.br
preprint available as astro-ph/0001206

Blazars, Jets, and the Unification of AGN

C. Megan Urry[1]

[1] Space Telescope Science Institute, 3700 San Martin Drive, Baltimore Maryland 21218

The rapid variability and high luminosity of blazars are signatures of beamed emission from powerful relativistic jets closely aligned with the line of sight. The jet emission is magnified a thousand-fold or more by relativistic beaming, providing a unique opportunity to probe how jets are formed and collimated near supermassive black holes. That such jets are common to all radio-loud active galaxies—the so-called "unification" hypothesis—is supported by observations of properties unaffected by relativistic beaming, such as host galaxies and local environments. Our recent HST studies of blazar host galaxies confirm they are luminous but otherwise normal ellipticals, well matched to the hosts of their parent radio galaxies. There is no sign that the active nucleus strongly affects the host galaxy or vice versa, and no correlation between nuclear (jet) power and host galaxy luminosity (mass), as might have been expected given an underlying relation between black hole mass and bulge mass. These results are consistent with the idea that all massive ellipticals harbor supermassive black holes, with (low) duty cycles of activity, and perhaps point to scenarios where the cosmic formation of black holes is closely linked to that of the most massive galaxies.

to appear in Cosmic Explosions (Proc. 14th Maryland meeting, College Park, October 1999), ed. S. S. Hole and W. W. Zhang, AIP

E-mail contact: cmu@stsci.edu

ISO-SWS spectroscopy of NGC 1068

D. Lutz[1], **E. Sturm**[1], **R. Genzel**[1], **A.F.M. Moorwood**[2], **T. Alexander**[3], **H. Netzer**[4], **A. Sternberg**[4]

[1]Max-Planck-Institut für extraterrestrische Physik, Postfach 1603, 85740 Garching, Germany
[2]European Southern Observatory, Karl-Schwarzschild-Straße 2, 85748 Garching, Germany
[3]Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, USA
[4]School of Physics and Astronomy and Wise Observatory, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Tel Aviv 69978, Israel

We present ISO-SWS spectroscopy of NGC 1068 for the complete wavelength range 2.4 to 45μm at resolving power $\sim$1500. Selected subranges have been observed at higher sensitivity and full resolving power $\sim$2000. We detect a total of 36 emission lines and derive upper limits for 13 additional transitions. Most of the observed transitions are fine structure and recombination lines originating in the narrow line region (NLR) and the inner part of the extended emission line region.

We compare the line profiles of optical lines and reddening-insensitive infrared lines to constrain the dynamical structure and extinction properties of the narrow line region. The most likely explanation of the considerable differences found is a combination of two effects. (1) The spatial structure of the NGC 1068 narrow line region is a combination of a highly ionized outflow cone

and lower excitation extended emission. (2) Parts of the narrow line region, mainly in the receding part at velocities above systemic, are subject to extinction that is significantly suppressing optical emission from these clouds. Line asymmetries and net blueshifts remain, however, even for infrared fine structure lines suffering very little obscuration. This may be either due to an intrinsic asymmetry of the NLR, as perhaps also suggested by the asymmetric radio continuum emission, or due to a very high column density obscuring component which is hiding part of the narrow line region even from infrared view.

We present detections and limits for 11 rotational and ro-vibrational emission lines of molecular hydrogen (H_2). They arise in a dense molecular medium at temperatures of a few hundred Kelvin that is most likely closely related to the warm and dense components seen in the near-infrared H_2 rovibrational transitions, and in millimeter wave tracers (CO, HCN) of molecular gas. Any emission of the putative pc-scale molecular torus is likely overwhelmed by this larger scale emission.

In companion papers we use the SWS data to derive the spectral energy distribution emitted by the active nucleus of NGC 1068 (Alexander et al. 2000), to put limits on infrared emission from the obscured broad line region (Lutz et al. 2000), and discuss the continuum and its features in conjunction with SWS spectra of other galaxies (Sturm et al. 2000).

Accepted by ApJ.

E-mail contact: lutz@mpe.mpg.de

Infrared spectroscopy of NGC 1068: Probing the obscured ionizing AGN continuum

T. Alexander[1], D. Lutz[2], E. Sturm[2], R. Genzel[2], A. Sternberg[3], H. Netzer[3]

[1]Institute for Advanced Study, Olden Lane, Princeton, NJ 08540, USA
[2]Max-Planck-Institut für extraterrestrische Physik, Postfach 1603, 85740 Garching, Germany
[3]School of Physics and Astronomy and Wise Observatory, Raymond and Beverly Sackler Faculty of Exact Sciences, Tel Aviv University, Ramat Aviv, Tel Aviv 69978, Israel

The *ISO-SWS* 2.5–45 μm infrared spectroscopic observations of the nucleus of the Seyfert 2 galaxy NGC 1068 (see companion paper) are combined with a compilation of UV to IR narrow emission line data to determine the spectral energy distribution (SED) of the obscured extreme-UV continuum that photoionizes the narrow line emitting gas in the active galactic nucleus. We search a large grid of gas cloud models and SEDs for the combination that best reproduces the observed line fluxes and NLR geometry. Our best fit model reproduces the observed line fluxes to better than a factor of 2 on average and is in general agreement with the observed NLR geometry. It has two gas components that are consistent with a clumpy distribution of dense outflowing gas in the center and a more extended distribution of less dense and more clumpy gas farther out that has no net outflow. The best fit SED has a deep trough at $\sim$4 Ryd, which is consistent with an intrinsic Big Blue Bump that is partially absorbed by $\sim 6 \times 10^{19}\,\mathrm{cm}^{-2}$ of neutral hydrogen interior to the NLR.

Accepted by ApJ.

E-mail contact: tal@ias.edu

Studies of Galactic Nuclei with Darwin, ESA's Infrared Space Interferometer

Andrew S. Wilson[1,2]

[1] Astronomy Department, University of Maryland, College Park, MD 20742, U.S.A.
[2] Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218

This paper describes a number of potential observing programs for Darwin in the area of galactic nuclei. Observations of our Galactic centre at the shorter wavelengths (5 μm) covered by Darwin will detect large numbers of stars. Extrapolation of the existing K band counts to the flux levels expected to be reached by Darwin in 1 hour suggests $\sim$ 5,000 detectable stars (arc sec)$^{-2}$ around the compact radio source Sgr A*, which is commonly believed to be associated with a black hole of mass 2.6 million $M_\odot$. Over its lifetime, Darwin will be capable of exquisitely accurate measurements of stellar proper motions, including the ability to follow entire stellar orbits around the hole for stars with orbital radii $\sim 10^{-3}$ pc. It may also be able to observe the general relativistic advance of the pericenter of stellar orbits somewhat closer to the hole. Stars behind the hole will be gravitationally lensed by it. It appears that the probability of observing a lensing event at any given time is of order unity at Darwin's resolution and sensitivity, so this should be a rich area of research. Darwin will measure the infrared spectrum of Sgr A* with a gain of $\sim$ 4 orders of magnitude of sensitivity over present upper limits, easily detecting the source if it conforms to the predictions of current ADAF models. Stars which approach too close to the black hole will be tidally disrupted by it, and Darwin's resolution is sufficiently good to spatially separate such a tidally disrupted red giant or supergiant from the black hole itself. However, the event rate is almost certainly too low for such a disruption to be seen in the mission lifetime. Dust shells around stars in the vicinity of the Galactic centre will be promising candidates for study. Darwin will be able to study the stellar luminosity function and stellar proper motions in the nucleus of M31. The possibility of using the stellar proper motions to estimate the mass of the nuclear black hole is discussed.

Potential investigations of the distributions of warm dust and gas in the nuclei of nearby active galaxies are described. Darwin should be able to image the dusty accretion disks in Seyfert galaxies, compact starbursts around active nuclei and, depending on the available spectral resolution, study the stratification of different ionic species through observations of fine structure lines. It may be possible to resolve the broad line region if the wavelength coverage extends to short enough wavelengths. Darwin's nulling mode will be valuable for blocking the bright, compact light of quasars and investigating the kinematics of the surrounding gas. Whether stars, gas or dust are observed, galactic nuclei present densely-populated, bright fields, so the primary technical requirement for good imaging fidelity is very extensive coverage of the uv plane.

To be published in "Darwin and Astronomy: The Infrared Space Interferometer", European Space Agency Publication Division, ESA SP-451 (2000)

E-mail contact: wilson@astro.umd.edu

Modeling the X-ray – UV Correlations in NGC 7469

Andrew J. Berkley[1], Demosthenes Kazanas[2] and Jonathan Ozik[1]

[1] Department of Physics, University of Maryland, College Park, MD 20743
[2] LHEA, NASA/GSFC Code 661, Greenbelt, MD 20771

We model the correlated X-ray – UV observations of NGC 7469, for which well sampled data in both these bands have been obtained recently in a multiwavelength monitoring campaign. To this end we derive the transfer function in wavelength λ and time lag τ for reprocessing hard (X-ray) photons from a point source to softer ones (UV-optical) by an infinite plane (representing a cool, thin accretion disk) located at a given distance below the X-ray source, under the assumption that the X-ray flux is absorbed and emitted locally by the disk as a black body of temperature appropriate to the incident flux. Using the observed X-ray light curve as input we have computed the expected continuum UV emission as a function of time at several wavelengths ($\lambda\lambda$1315 Å, $\lambda\lambda$6962 Å, $\lambda\lambda$15000 Å, $\lambda\lambda$30000 Å) assuming that the X-ray source is located one Schwarzschild radius above the disk plane, with the mass of the black hole M and the latitude angle θ of the observer relative to the disk plane as free parameters. We have searched the parameter space of black hole masses and observer azimuthal angles but we were unable to reproduce UV light curves which would resemble, even remotely, those observed. We also explored whether particular combinations of the values of these parameters could lead to light curves whose statistical properties (i.e. the autocorrelation and cross correlation functions) would match those corresponding to the observed UV light curve at $\lambda\lambda$1315 Å. Even though we considered black hole masses as large as 10^9 $M_\odot$ no such match was possible. Our results indicate that some of the fundamental assumptions of this model will have to be modified to obtain even approximate agreement between the observed and model X-ray – UV light curves.

Accepted by Astroph. J.

E-mail contact: kazanas@milkyway.gsfc.nasa.gov,
preprint available at astro-ph 0001239

High–resolution radio observations of Seyfert galaxies in the extended 12–micron sample – I. The observations.

Andy Thean[1,2], Alan Pedlar[2], Marek J. Kukula[3], Stefi A. Baum[4] and Christopher P. O'Dea[4]

[1] Istituto di Radioastronomia del CNR, Via P. Gobetti 101, I–40129 Bologna, Italy
[2] Nuffield Radio Astronomy Laboratories, University of Manchester, Jodrell Bank, Macclesfield, Cheshire SK11 9DL, U.K.
[3] Institute for Astronomy, University of Edinburgh, Royal Observatory, Blackford Hill, Edinburgh EH9 3HJ
[4] Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, Maryland 21218, USA

We present 8.4 GHz VLA A–configuration observations of 87 sources from the mid–infrared–selected AGN sample of Rush et al (1993). These 0.25 arcsec resolution observations allow elongated radio structures tens of parsecs in size to be resolved and enable radio components smaller than 3.5 arcsec to be isolated from diffuse galactic disc emission. When combined with previous data, matched radio observations covering ninety percent of the sample have been collected and these represent the largest sub–arcsecond–resolution radio imaging survey of a homogeneously–selected sample of Seyfert galaxies to date.

We use our observations to identify 5 radio–loud AGN in the sample. The nature of the radio emission from Seyfert nuclei will be discussed in subsequent papers.

Accepted by MNRAS

E-mail contact: ahct@jb.man.ac.uk,

preprint and ascii data list available at http://www.jb.man.ac.uk/~ahct/pub.html

Arp 102B: variability patterns of the H_α line profile as evidence for gas rotation in the broad-line region

S.G. Sergeev[1,2], V.I. Pronik[1,2] and E.A. Sergeeva[1,2]

[1] Crimean Astrophysical Observatory, Nauchny, 98409 Crimea, Ukraine
[2] Isaac Newton Institute of Chile, Crimean Branch

We present results of an optical spectral monitoring campaign of the Seyfert 1 galaxy Arp 102B for a period of about 4 years between 1992 July and 1996 October carried out with a CCD spectrograph at the 2.6-m Shajn Telescope of the Crimean Astrophysical Observatory. Our data set consists of 20 H_α and 1 H_β region spectra. During the monitoring period, the H_α line and continuum fluxes have shown the root mean square (rms) variations as small as 2.7% and 5.7%, respectively. The H_α line lag greater than 66 days is ruled out at 99% confidence level. Strong rms variations at different bins of the H_α profile (5–10%), while its total flux is changed only a little can be explained by the rotational redistribution of matter emitted the broad lines. We consider two possibilities: a continuous disk with inhomogeneities in its surface brightness and a system of clouds rotating predominantly in the same plane. Different sections of the line profile generally show very poor correlation between themselves as well as with the continuum flux, while the correlation between the line integrated flux and continuum flux is much better. The line component that respond to the continuum changes is probably more prominent in the red central part of the line profile, where the correlation with the continuum fluxes is somewhat better. Some indications of the rotation are also seen from the evolution of the residuals between each normalized profile and the mean normalized profile. Typical timescale of rotation (~ 1000 days) suggests a very large mass of the central body of about 3.5×10^8 $M_\odot$.

Accepted by A&A

E-mail contact: sergeev@crao.crimea.ua

Radio and X-ray Bright AGN: The ROSAT - FIRST Correlation

W. Brinkmann[1], S.A. Laurent-Muehleisen[2,3,4] W. Voges[1], J. Siebert[1], R.H. Becker[3], M. S. Brotherton[2], R. L. White[5] and D.M. Gregg[3]

[1] Max–Planck–Institut für extraterrestrische Physik, Giessenbachstrasse, D-85740 Garching, FRG
[2] Institute for Geophysics and Planetary Physics, Lawrence Livermore National Laboratory, Livermore, CA 94450 , USA
[3] Physics Dept., University of California, Davis, CA 95616, USA
[4] Visiting Astronomer, Kitt Peak National Observatory, National Optical Astronomy Observatory, USA
[5] Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218, USA

We present the results of a correlation of the ROSAT All-Sky Survey with the April 1997 release of the VLA 20cm FIRST catalogue. We focus our analysis on the 843 X-ray sources which have unique radio counterparts. The majority of these objects (84%) have optical counterparts on the POSS 1 plates. Approximately 30% have been previously classified and we obtain new spectroscopic classifications for 85 sources by comparison with the ongoing FIRST Bright Quasar Survey and 106 additional sources from our own new spectroscopic data. Approximately 51% of the sources are presently classified, and the majority of the unclassified objects are optically faint. The newly classified sources are generally radio weak, exhibiting properties intermediate with previous samples of radio- and X-ray−selected AGN. This also holds for the subsample of 71 BL Lacs which includes many intermediate objects. The 146 quasars show no evidence for a bimodal distribution in their radio-loudness parameter, indicating that the supposed division between radio-quiet and radio-loud AGN may not be real. The X-ray and radio luminosities are correlated over two decades in radio luminosity, spanning the radio-loud and radio-quiet regimes, with radio-quiet quasars showing a linear correlation between the two luminosities. Many of the sources show peculiar or unusual properties which call for more detailed follow-up observations. We also give the X-ray and radio data for the 518 X-ray sources for which more than one radio object is found. Because of the difficulties inherent in identifying optical counterparts to these complex sources, we do not consider these data in the current analysis

Accepted by A&A

E-mail contact: wpb@mpe.mpg.de

Meetings

Probing the Physics of Active Galactic Nuclei by Multiwavelength Monitoring

NASA Goddard Space Flight Center, Greenbelt, Maryland, USA
20–22 June 2000

PRELIMINARY ANNOUNCEMENT

We are pleased to announce a scientific workshop on "Probing the Physics of Active Galactic Nuclei by Multiwavelength Monitoring" to be held 20-22 June 2000 at the NASA Goddard Space Flight Center in Greenbelt, Maryland.

Scientific Organizing Committee: Keith Horne (University of St. Andrews, SCOTLAND)

Gerard A. Kriss (Space Telescope Science Institute, USA)

Mario Livio (Space Telescope Science Institute, USA)

H. Richard Miller (Georgia State University, USA)

Richard Mushotzky (NASA Goddard Space Flight Center, USA)

Hagai Netzer (Tel-Aviv University, ISRAEL)

Paul T. O'Brien (University of Leicester, UK)

Bradley M. Peterson, chair (Ohio State University, USA)

Ronald S. Polidan (NASA Goddard Space Flight Center, USA)

C. Megan Urry (Space Telescope Science Institute, USA)

The purpose of this workshop will be to review critically current observational and theoretical progress in our understanding the inner structure of active galactic nuclei (AGNs) through multiwavelength spectral monitoring. The scientific focus of the meeting will be AGN accretion disks, jets, and the broad emission-line regions. Plans for the next generation of multiwavelength monitoring campaigns for both thermally and non-thermally dominated AGNs will be discussed.

On account of space considerations and our desire to make this a highly interactive workshop, participation at this meeting will be restricted to fewer than 75 individuals, including both observers and theorists. We hope to have a small amount of support for participation of younger scientists.

A formal "First Announcement" will be issued in the near future, with a solicitation for contributed papers. If you wish to be kept on the mailing list for this conference, please contact Brad Peterson at peterson@astronomy.ohio-state.edu.

The Active Galaxies Newsletter is available on the World Wide Web. You can access it via the University of Manchester home page :- http://www.ast.man.ac.uk/~mpr/agn/