303.04 — Finding Strong Gravitational Lenses with Deep Neural Networks

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We perform a semi-automated search for strong gravitational lensing systems in the 14,000 deg^2 DESI Legacy Imaging Surveys (Dey, Schlegel et al.). The combination of the depth and breadth of these surveys are unparalleled at this time, making them particularly suitable for discovering new strong gravitational lensing systems. We adopt the deep residual neural network architecture (He et al.) developed by Lanusse et al. for the purpose of finding strong lenses in photometric surveys. We compile a training set that consists of known lensing systems in the Legacy Surveys and DES as well as strategically selected non-lenses in the footprint of the DESI Legacy Imaging Surveys. Here we present the results of applying our trained neural network to the cutout images centered on galaxies typed as ellipticals (Lang et al.) in the Legacy Surveys. The images that receive the highest scores (probabilities) are visually inspected and ranked. At this point, we have found hundreds of high quality candidate strong lensing systems, identified for the first time.

303.05 — Gravitational Lensing with the Velocity Field

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Weak gravitational lensing uses imaging of distant sources to map the weak gravitational influences along most lines of sight in the universe. Because the transformation of sources is approximately linear, it maps elliptical sources to elliptical images and is signal-starved without a priori knowledge of the source. We consider also including spectroscopic information for sources such as rotating disk galaxies with very ordered velocity fields. this effectively "tags" each pixel in the image plane with its source counterpart, providing a much more precise lensing signal. We present a Fisher matrix analysis using an idealized galaxy model, which finds a degeneracy between the shear and magnification familiar from traditional weak lensing. We find that even a wide prior on the magnification, however, provides precise shear constraints in many cases. In order to advise observing strategies, we explore the dependence of precision on inclination of the source, shear, spectroscopic precision, etc. Finally, we present MCMC samples of the likelihood consistent with the Fisher constraints.

303.06 — Cosmic String Microlensing for WFIRST

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Cosmic strings accumulate like dark matter in the potentials of gravitationally bound structures in the Universe. Thus, missions targeting the bulge of our galaxy are of interest for searches of cosmic loops. WFIRST observations of the bulge will be sensitive to string tensions in the range of 10^{-15} to 10^{-12}. We evaluate WFIRST's efficiency for detecting cosmic string microlensing, assessing the effect of various detection criteria on the rate of false dismissals and false detections. Our method is to generate data representative of string loop properties and simulate the predicted WFIRST observations. We suggest strategies that optimize prospects for detection and measuring string loop tensions and parameters. Detecting cosmic strings WFIRST would allow us to have a better understanding of the physical laws that governed the early universe, as well as a better understanding of the inflation era and how topological defects were created.

Poster Session 304 — AGN and Quasars I

304.01 — Monitoring AGN with Hβ Asymmetry: NGC 2617 and NGC 4151

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NGC 2617 and NGC 4151 are known changing look quasars with previous reverberation mapping results. Both of these objects are being observed as part of the Monitoring AGN with Hβ Asymmetry (MAHA) project using the Wyoming Infrared Observatory (WIRO). Here we present the new high-fidelity reverberation mapping results for both of these objects. We also report a change in the asymmetry in NGC 2617 from the blue asymmetry reported by Fausnaugh et al. (2017, ApJ, 840, 97) to

a red one. Our research was supported by the National Science Foundation under REU grant 1852289, PAARE grant AST 1559559, and the Wyoming Research Scholars Program.

304.02 — Monitoring AGNs with H-beta Asymmetry: Markarian 841

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New optical spectroscopy was obtained on the Wyoming Infrared Observatory (WIRO) 2.3-meter telescope for the AGN Markarian 841. This object was observed as part of the Monitoring AGN with Hβ Asymmetry (MAHA) project. We report high fidelity reverberation mapping results for Mrk 841, including mass determination, continuum and Hβ light curves, and a time-resolved velocity delay graph.

304.04 — Monitoring AGNs with Hβ Asymmetry: A Study of Mrk704

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As part of the Monitoring AGNs with Hβ Asymmetry (MAHA) Collaboration, we present results of a long-term reverberation mapping (RM) campaign of Mrk704. Our high-fidelity data set was obtained with the Wyoming Infrared Observatory 2.3m telescope. Mrk704, a Seyfert 1 galaxy, has previously been reverberation mapped with complex results. We report a new broad-line region (BLR) time lag measurement and its corresponding black hole mass estimate. These results agree with previous measurements by De Rosa et al. 2018 and Afanasiev et al. 2019. We also present velocity-resolved time lags, which suggest a possible binary system. A close binary system may explain the complex Hβ profile and RM results, but more modeling is necessary to confirm this result. This work is supported by the National Science Foundation under REU grant AST 1852289 and PAARE grant AST 1559559.

304.05 — Monitoring AGNs with Hbeta Asymmetry: Reverberation Mapping of PG 0947+396 and PG 1613+658

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We have been conducting a reverberation campaign called MAHA (Monitoring AGNs with Hbeta Asymmetry) using the Wyoming Infrared Observatory (WIRO) 2.3 meter telescope. Targets include the quasars PG 0947+396 and PG 1613+658. We present our results, which include the first Hbeta time lag measurement for PG 0947+396, and the best measured time lag for PG 1613+658, which we compare to previous work. Luminous PG quasars represent a key sample for understanding the radius-luminosity relationship of AGNs, which underlies single-epoch techniques of black hole mass estimation. This work is supported by the NationalScience Foundation under REU grant AST 1852289 and PAARE grant AST1559559.

304.06 — Prevalence of Circumnuclear Stellar Disks in Seyfert Galaxies

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We present the stellar surface brightness profiles of 40 Seyfert galaxies as part of the Keck OSIRIS Nearby AGN, KONA, survey. After removal of the bulge component revealed in HST H-band imaging, the nuclear stellar light excess associated with an extended nuclear disk structure within the central few

hundred parsecs is quantified. This region is also assessed for potential drops in velocity dispersion associated with the dynamically cooler young stellar populations in these disks. A comparison of the stellar surface brightness profiles in Seyfert type 1 and type 2 populations will also be presented.

304.07 — Kinematics of a Nearby Active Galaxy

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A key question in galaxy evolution is how supermassive black holes relate to their host galaxies. Active Galactic Nuclei (AGN) are powered by a supermassive black hole that is about 1/1000th of the total mass in stars of the galaxy itself, but yet can eject tremendous amounts of energy back into the galaxy. This energy will heat and/or expel the gas content of the galaxy, which as a consequence can reduce or even stop the birth of new stars (which would have form out of the gas). We have some high-quality 3D-spectroscopy data of a couple of nearby galaxies with an AGN. In case you have not heard about this technique, 3D spectroscopy means that there is a spectrum at several locations over a region of the sky, in our case over different parts of a given galaxy. Spectroscopy is a great way to measure properties of both stars and gas, including the chemical make-up of the gas but also the kinematics. Different regions within a galaxy can exhibit variations in their composition and/or motion so with 3D spectroscopy, we can spot these variations within a galaxy, and therefore search for clues relating to how the AGN might affect the galaxy at different scales.

304.08 — The X-ray View of Merger-Induced AGN Activity at Low Redshift

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Galaxy mergers are predicted to trigger accretion onto the central supermassive black hole, with the highest rates occurring during final coalescence in major, gas-rich mergers. In previous work, we have shown elevated rates of both optical and mid-IR selected active galactic nuclei (AGN) in recent post-mergers, but to date the prevalence of X-ray AGN has not been examined in the same systematic way. In this paper, we present X-ray of 49 post-merger galaxies along with non-interacting control galaxies matched in stellar mass and redshift, in order to test for an excess of X-ray emission from post-merger galaxies attributable to triggered AGN activity. We find that post-mergers exhibit a factor of ∼5 excess of X-ray sources with observed 2-10 keV luminosities above 10^{40} erg/s compared to the controls, and this excess holds to higher X-ray luminosity thresholds, consistent with an enhancement of AGN activity. Mid-IR AGN in the same sample of post-mergers, however, exhibit an excess of ∼10 or more, suggesting that the X-ray emission is heavily attenuated. Optical AGN in the same post-mergers show the lowest enhancement over the controls, a factor of about ∼2 in agreement with past work, but their observed X-ray luminosities are higher by a factor of ∼30 over the X-ray luminosities of post-mergers not classified as optical AGN, suggesting that optically-selected AGN in post-mergers are intrinsically more luminous than non-optical AGN. The difference in optical and X-ray selected AGN excesses can be understood as enhanced star-formation in post-mergers precluding optical AGN classification at lower intrinsic luminosities due to significant contamination of the emission line fluxes from star formation, so that many galaxies classified as star forming from optical emission lines actually host AGN. Post mergers show an enhancement in AGN classified using multiple different criteria, suggesting that their AGN are intrinsically more luminous than AGN in non-mergers. Our results are consistent with the post-merger stage being characterized by both enhanced AGN fueling and heavy AGN obscuration, in line with theoretical predictions.

304.09 — Molecular Gas Heating and Modified Dust Properties in Active Galaxies: Growing Black Holes or Tidal Shocks?

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We investigate if and how growing supermassive black holes and gravitational interactions affect the warm molecular gas and dust of galaxies. Our analysis focuses on the morphologies and warm interstellar medium (ISM) properties of 630 galaxies at z < 0.1. We use grizy images from the Pan-STARRS survey to classify the galaxies into mergers, early mergers, and non-mergers. We look at the effect of merger status on the molecular hydrogen (H2) temperature

and dust properties of the ISM inferred from mid-infrared (MIR) spectroscopic measurements, including the active galactic nucleus (AGN) contribution to the total IR emission, the H2 rotational transitions, PAH emission lines, and the strength of the silicate absorption lines. We find that in AGN hosts, the ISM is warmer, the PAHs are more ionized, and the silicate strengths have a wider range of values than in non-AGN hosts. We find some statistical differences between the H2 properties of mergers and non-mergers, but those differences are less statistically significant than those between AGN and non-AGN hosts. We also infer that the warm gas and dust of non-AGN hosts spans a smaller range of properties than that of AGN-dominated sources. A growing supermassive black hole increases the temperature of at least one component of the warm molecular ISM, the relative importance of H2 to PAH cooling, and the ionization of PAHs, while mergers are associated with higher 11.3 PAH luminosities and deeper silicate absorption features. These statistical findings may reflect a wide range of triggering mechanisms, AGN orientations, and the evolutionary stages of the hosts galaxies.

304.10 — The host galaxy and black hole of a gamma-ray bright Narrow Line Seyfert 1 at z∼0.6

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The Narrow-Line Seyfert 1 (NLS1) galaxy SBS 0846+513 is a strong gamma-ray emitter — one of only a handful known. This requires relativistic jets, but NLS1 are nearly all in spiral galaxies, which very rarely produce jets. Furthermore, the smaller black holes of NLS1 had been thought to be unable to produce jets of this scale. But the gamma-ray bright NLS1 are at redshifts that make it difficult to examine the host galaxies. Are the host and black hole of SBS 0846+513 unusual? We observed this galaxy with the Large Binocular Telescope and are able to resolve the broad features of its host. We find its host likely to have a bulge and disk, with a Bulge/Total ratio consistent with those in the S0/a-Sb range. We estimate the black hole mass to lie between $7.68 < \log(M/M_{\odot}) < 8.16$, using the correlation with bulge luminosity, or $7.96 < \log(M/M_{\odot}) < 8.16$ using the correlation with Sersic index, putting its mass near the middle of the Narrow Line Seyfert 1 range. These estimates are independent of the Broad Line Region viewing geometry and avoid underestimates due to looking down the jet axis. Its isophotes show no significant boxiness or diskiness, and only a small degree of twist.

304.11 — Ionization Mechanisms in Nearby Active Galaxies

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We study the ionization mechanisms of multiple Seyfert galaxies as a function of distance from the nucleus using long-slit spectra from Apache Point Observatory's (APO's) 3.5 m telescope. We fit multiple kinematic components to the emission lines to determine line ratios for each component along multiple slit locations. We identify the source of ionization (AGN or star formation) at each position along each slit using Baldwin Phillips Terlevich (BPT) diagrams based on our measured emission-line ratios. We compare our BPT diagrams with HST color images to identify regions of star formation within the Seyfert host galaxies and investigate their connection to the kinematics of the outflowing gas. This is part of an ongoing research effort at Georgia State University to investigate the connection between AGN feedback and star formation.

304.12 — Comparing radial distributions of optical and radio structures in Active Galactic Nuclei

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A supermassive black hole (SMBH) exists in the bulge of every massive galaxy. The fraction of these SMBHs that accrete mass from their galactic disks are known as active galactic nuclei (AGN) and are a critical force in controlling the evolution of their host galaxies. Therefore, to understand the greater process of galaxy evolution, it is essential to quantify mass and energy dynamics in AGN. The objective of this study is to determine the relationship between optical [O III] structures and radio structures in nearby radio-quiet AGN. Using images taken by the Hubble Space Telescope (HST) and the Very Large Array (VLA), six AGN were analyzed to compare the radial distributions of their optical and radio gas. This data contributed to various 2-D and 3-D gas

distribution plots for each target to visually demonstrate the relationship between their optical and radio structures, both with and without the flux contribution of the galactic nucleus. The resultant findings indicate that in all six targets the strongest radio emissions lie radially outside of the strongest optical emissions, suggesting that radio structures in AGN are a byproduct of the physical interaction between observed [O III] emission and the galactic host disk.

304.13 — Ly-alpha Halos Around Extremely Red Quasars

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Extremely Red Quasars (ERQs) at redshifts z $\sim$ 2 to 3 are defined by their red colors in rest-frame UV to mid-IR by combining SDSS and WISE magnitudes, or (i - W3) > 4.6 (Hamann et al. 2017). They also have peculiar line properties that include unusual broad emission-line profiles with large equivalent widths in CIV (REW CIV > 100 Å), a high incidence of broad absorption lines (BALs and mini-BALs), and the fastest [OIII]4959,5007 line outflows ever reported, reaching >6000 km/s (Perrotta et al. 2019). These features in combination with the extreme red colors might be indicative of a young embedded quasar population that is participating in blowouts and feedback effects in the host galaxies. Our team is involved in a program using KCWI to measure the Lyman-alpha halos around ERQs. We specifically want to test whether ERQs have more massive or extended halos than other luminous quasars/galaxies at these redshifts caused, perhaps, by quasar-driven blowouts or infall from the inter-galactic medium during the early stages of host galaxy assembly in cold-mode accretion. In this poster, present preliminary results for a sample of four ERQs measured so far. An accompanying poster by Marie Wingyee Lau provides further details about the program plus a more detailed analysis of the kinematics of one well-measured and interesting ERQ.

304.14 — Extreme Silicate Absorbers

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Galactic nuclei heavily enshrouded by dust are extremely rare, and they may signal the earliest stages in a merger-induced transition from powerful starburst to naked QSO. Using the WISE All-Sky Data Release and UKIDSS catalogs, we have identified a sample of 0.8 < z < 1.5 infrared-bright galaxies with 9.7 micron silicate optical depths > 1. We discuss the space density of these Extreme Silicate Absorbers using our total sample, extracted from thousands of square degrees of sky, comparing that to what little is known locally (less than 10 ULIRGs) and to the GOODS Herschel silicate absorption samples of Magdis et al. (2011). We use fits to the mid−infrared continuum slope to measure the depth of the silicate absorption feature. Using Herschel 70, 100, and 160 micron PACS photometry, we also characterize the peak of the infrared emission for a subset of our sample.

304.15 — Adaptation of spectral-cube fitting software for Spitzer and JWST studies of active galaxies

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Spitzer mid-infrared spectral maps of nearby low-luminosity active galactic nuclei, including Messier 58 and NGC 4258 reveal the physical conditions of the interstellar medium in molecular gas and star-forming regions impacted by AGN feedback. We find that the bulges of these galaxies have large volumes of warm molecular gas that appear to be shock-heated by their radio jets and where star formation appears to be suppressed. These shocked regions emit strongly in H_2 pure-rotational lines, and have low PAH 7.7μm/PAH 11.3 μm dust emission feature ratios. We developed spectral-cube fitting software in Python that we plan to make available to the community for analysis of future JWST MIRI MRS and NIRSpec IFU spectroscopy of galaxies. Integral field spectroscopy with the James Webb Space Telescope (JWST) will reveal the impact of supermassive black hole feedback on the interstellar medium and galactic star formation over a wide range of cosmic history.

304.16 — Playing with Matches

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In this project, we identify candidate AGN from the SDSS eBOSS catalog by comparing position on the

sky and redshift of observed QSOs to galaxy groups identified in SDSS DR8 by a modified friends-of-friends algorithm. We aim to identify characteristics of these candidate AGN; in particular we examine typical position in the group, finding that about 30% of our AGN are located in the brightest group galaxy (BGG), 40% are located in another member galaxy, and the remaining 30% did not match to a member galaxy (likely indicating an incomplete group member catalog). We suggest that with such a significant proportion of AGN located outside the BGG, group dynamics may play a greater role in activation of AGN than previously thought.

304.17 — Measuring the Extents of AGN Outflows using Spatially Resolved Spectroscopy

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We present a spatially resolved kinematic study of the ionized gas in a sample of nearby active galaxies using long-slit spectra from the *Apache Point Observatory's* (*APO's*) 3.5 m Telescope and the *Hubble Space Telescope* (*HST*). We measure the extent of active galactic nuclei (AGN) driven outflows and determine the transition point between outflowing gas and galaxy rotation. We also calculate the bulge sizes and masses of the galaxies using GALFIT with archival *HST* images. Our goal is to determine the effectiveness of radiative driving of AGN outflows by comparing the outflow extents with the bulge mass distributions. This work is part of the ongoing research at Georgia State University to address the question of whether or not AGN outflows are capable of evacuating star forming gas from the bulge.

304.18 — Multiwavelength Diagnostics of Quasar Accretion Power

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We present the results of our attempts to identify a robust accretion-rate indicator for quasars based on a unique quasar sample. We selected 48 quasars from the Chandra X-ray Observatory archive that are radio quiet, do not have broad absorption lines, and have high-quality data in the C IV and Hβ spectral bands. Among the various spectral properties that we investigated, our results show that the equivalent width (EW) of C IV is the strongest indicator of the Hβ-based Eddington ratio. We do not find evidence for broad-band optical-X-ray emission (i.e., α_{ox}) improving predictions of the latter parameter. Since about half of our sources have optical-band monochromatic luminosities above $10^{45.5}$ erg/s, a potential explanation of this result could be that a strong correlation between EW(C IV) and α_{ox} is only observed above a certain luminosity threshold above which strong quasar winds may form. Shallow Chandra observations of a well-defined sample of luminous sources may allow us to mitigate the biases inherent in our archival sample and test this hypothesis. Furthermore, deeper X-ray observations of our sources may provide accurate measurements of the hard-X-ray power-law photon index (Γ), which is considered an unbiased Eddington-ratio indicator. Correlations between EW(C IV) and α_{ox} with the Γ-based Eddington ratio may yield a more robust prediction of a quasar normalized accretion rate. This work is supported by a Chandra X-ray Observatory Archival Research Grant AR8-19014X.

304.19 — Testing Quasar Accretion Disk Wind Models using the SDSS Spectral Database

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Accretion disk winds driven by UV radiation from the inner disk constitute a leading model for the broad absorption lines (BAL) observed in quasars. This investigation provides a crucial test of accretion disk wind models by comparing simulated absorption spectral profiles to observed BAL parameters using data from the Sloan Digital Sky Survey (SDSS). We perform principal component analyses on both the simulated and observed data to determine the validity of these theoretical models based on their relative correlations. This study focuses on the kinematic and geometric properties of the quasar and the disk wind, such as orientation of the disk, black hole mass, and wind terminal velocity, and these correlation studies reveal important insights into how these physical processes govern the outflowing accretion disk winds.

304.20 — AGN Black Hole Mass Estimates

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It is well-known that reverberation mapping of active galactic nuclei (AGN) reveals a relationship between AGN luminosity and the size of the broad-line region, and that use of this relationship, combined with the Doppler width of the broad emission line, enables an estimate of the mass of the black hole at the center of the active nucleus based on a single spectrum. This has been discussed in numerous papers over the last two decades. An unresolved key issue is the choice of parameter used to characterize the line width; generally, most researchers use FWHM in favor of line dispersion (the square root of the second moment of the line profile) because the former is easier to measure, less sensitive to blending with other features, and usually can be measured with greater precision. However, use of FWHM introduces a bias, stretching the mass scale such that high masses are overestimated and low masses are underestimated. Here we describe a simple method that reduces the bias, but allows use of FWHM. Black hole masses based on the strong UV emission lines, C IV 1549 and Mg II 2800, are calibrated against the well-characterized Hbeta emission line. By utilizing only a few simple assumptions, black hole masses with an uncertainty of less than a factor of three or so are obtained.

304.21 — Modeling the SED of the Dusty Torus around the Intermediate Mass Black Hole inside Type I Seyfert NGC 4395

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We model the Spectral Energy Distribution (SED) of the center of dwarf galaxy NGC 4395, which harbors one of the least luminous and least massive supermassive black holes (SMBH) known. Using photometry spanning the near-ultraviolet to the mid-infrared (in conjunction with radiative transfer models governing how light between the central engine, accretion disk, and encompassing torus is recycled), we construct the highest resolution SED of NGC 4395. We jointly model the contribution of the accretion disk, torus, and galaxy to show that clumpy torus models are preferred and smooth torus models cannot describe the mid-IR spectrum. We discuss further implications of this work in the grander context of Intermediate-Mass Black Hole (IMBH) characteristics and the role that SED modeling will play in the hunt for IMBHs with the upcoming James Webb Space Telescope.

304.22 — Simulating the Orbital Evolution of a Black Hole Embedded in an Active Galactic Nucleus Disk

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It has been proposed Active Galactic Nucleus (AGN) disks are efficient in growing and forming black hole (BH) binaries that then merge, which can explain the progenitor BH masses and binary BH merger rate the Laser Interferometer Gravitational-Wave Observatory (LIGO) and Virgo are detecting [McKernan, B et al. 2018, Bellovary, J. et al. 2016, McKernan, B. et al. 2014]. BHs embedded in AGN disks can orbit in prograde or retrograde. Prograde orbiters have been examined extensively in protoplanetary science, but little work has been done analyzing retrograde orbiters. We used a hydrodynamic static grid code, the Pencil Code, to simulate individual prograde and retrograde BHs of mass ratio q ~ 1e-4 in a radiation dominated section of the Sirko & Goodman AGN disk model and included Shakura & Sunyaev viscosity. We find prograde orbiters produce larger density perturbations than retrograde orbiters. Torques on prograde orbiters significantly exceed the torques on retrograde orbiters and in turn cause the prograde orbiters to migrate faster than the retrograde orbiters. We also compared our analytic model to simulation results. The calculated torques produced by migrating BH orbiters will be useful in models of analyzing BH binary formation and merger.

304.23 — Adolescent Black Holes may be Hard to Find

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Finding high redshift adolescent black holes that are growing rapidly from their seed masses will not be as

easy as at lower redshift as they will have weak broad emission lines (BELs) in the optical /UV because: (1) Below 10^6 Msol, the equivalent widths of the BELs drop precipitously. (2) At low metallicities (Z/Zsol $\sim<$ 3) the thermal instabilities that likely create the the BEL Clouds will not exist. (3) 90% of iron comes from type 1a supernovae, which take ~1 billion years to ignite. Iron will thus be strongly under-abundant before z = 6. The thermal instability is due mainly to line emission by iron, so BEL clouds will not form when [Fe]/[H] is low. This could be why no quasars are found at z > 7.5. Quasars at z > 7.5 could still be found by their rest-frame ultraviolet to X-ray continuum.

304.24 — Monitoring AGNs with Hβ Asymmetry: Reverberation Mapping of Markarian 6

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We have been conducting a reverberation mapping campaign using the Wyoming Infrared Observatory 2.3 meter telescope, and the Seyfert galaxy Markarian 6 is of special interest. Our longslit spectra provide continuum and Hβ light curves densely sampled 2/3 of the last three years, providing both the average time lag between the continuum signal of the accretion disk and the emission line signal of the broad line region (BLR) as well as velocity-resolved time lags. The high fidelity of the data has also allowed for the creation of two-dimensional velocity-resolved time delay maps that suggest the presence of two BLR disks and thus a supermassive black hole binary system. This work is supported by the National Science Foundation under REU grant AST 1852289 and PAARE grant AST 1559559.

304.25 — Monitoring AGNs with Hbeta Asymmetry: 1ES0206+52

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We have obtained new optical spectroscopy on the AGN in 1ES0206+52, a galaxy in the MAHA (Monitoring AGNs with Hβ Asymmetry) survey, using the Wyoming Infrared Observatory (WIRO) 2.3 meter telescope. Our longslit spectra provide densely sampled, updated light curves for the continuum as well as for the Hβ and He II emission lines in the broad line region (BLR). The high-fidelity of the data has allowed for a monitoring of the evolution of the BLR and the He II emission line, analyzed due to its prominence in the spectrum for this object, has allowed for results which complement that of the Hβ light curve. From our data set, we have been able to provide an estimate for the average time lag between the continuum signal of the accretion disk and the emission lines signal of the BLR. Future analysis of the data for the AGN in 1ES0206+52 will explore the full diversity of Hβ and He II emission lines and the physics of AGN BLRs. This work is supported by the National Science Foundation under REU grant AST 1852289 and PAARE grant AST 1559559.

304.26 — Monitoring AGNs with HBeta Asymmetry: Looking at VIIIZw233

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We observed new optical data using longslit spectroscopy from the 2.3 meter Wyoming Infrared Observatory (WIRO) as a part of the Monitoring AGNs with HBeta Asymmetry (MAHA) campaign. The data we obtained was a part of the third campaign for MAHA. We used the reverberation mapping method to monitor these AGN. This method involves looking at the continuum of the AGNs accretion disk as well as the emission spectra for the Broad Line Region (BLR). Knowing light travels at a finite speed, we can measure the time lags from the continuum to the photoionized BLR. With these time lags, the mass is obtained. Our longslit spectra provides light curves for the continuum and the BLR, as well as velocity resolved time lags. The high fidelity of the data has also helped produce two dimensional velocity resolved time delay maps of specific objects in the MAHA campaign. There are a few AGN candidates

that show potential to be black hole binary systems. The object of focus, VIIIZw233, is not a binary candidate, but does show promising features of a potential tidal disruption event. Further analysis is required to determine anything definitive.

304.27 — HST Polarimetry of Quasar Jets

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Polarization is a critical parameter for understanding jet flows, as their radio to optical emission is produced by synchrotron radiation, which is naturally polarized, with the inferred magnetic field direction indicating the magnetic field direction in the emission region. Polarization has proven essential in characterizing the physics of FR I jets, where it has helped us map out their magnetic field and energetic structure and the relationship of this structure to the high-energy emission and particle acceleration. To date, high-quality HST polarimetry has been analyzed for just one FR II jet, that of PKS 1136-135. To rectify this, we have obtained new HST polarimetry observations of three key FR II jets - 3C 273, PKS 0637-752, and 1150+497. These new observations allow for the determination of the magnetic field structure and confirmation of which emission mechanisms are operating to create the observed optical to X-ray emission, and will allow us to greatly advance modeling efforts for these jets and nail down their kinetic power, a key parameter for understanding quasars and their cosmological effects.

304.28 — To TDE or not to TDE: The luminous transient ASASSN-18jd with TDE-like and AGN-like qualities

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We present the discovery of ASASSN-18jd (AT 2018bcb), a luminous optical/UV/X-ray transient located in the nucleus of the galaxy 2MASX J22434289-1659083 at $z = 0.1192$. *Swift* UVOT photometry shows the UV SED of the transient to be well modeled by a slowly shrinking blackbody with temperature $T \sim 2.5 \times 10^4$ K, a maximum observed luminosity of $L_{max} = 4.5^{+0.6}_{-0.3} \times 10^{44}$ erg/s, and a total radiated energy of $E = 9.6^{+1.1}_{-0.6} \times 10^{51}$ erg. X-ray data from *Swift* XRT and *XMM-Newton* show a transient, variable X-ray flux with blackbody and power-law components. Optical spectra show strong, roughly constant broad Balmer emission as well as transient features attributable to He II, N III-V, O III, and coronal Fe. While ASASSN-18jd shares similarities with Tidal Disruption Events (TDEs), it is also similar to the "rapid turn-on" events seen in quiescent galaxies and in faint Active Galactic Nuclei (AGNs).

304.29 — Fundamental X-ray Corona Parameters of *Swift*/BAT AGN

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While X-ray emission from active galactic nuclei (AGN) is common, the detailed physics behind this emission is not well understood. This is in part because high quality broadband spectra are required to precisely derive fundamental parameters of X-ray emission such as the photon index, folding energy, reflection coefficient, etc. Here we present values of such parameters for 27 AGN observed as part of the 105 month *Swift*/BAT campaign and with coordinated archival *XMM-Newton* and *NuSTAR* observations. We also look for correlations between these parameters as well as with physical properties such as black hole mass and Eddington ratio. In addition, we present results on soft excess and Fe Kα line characteristics. The folding energy could be constrained for eighteen of our objects, with the median constrained folding energy being considerably lower than the median of the lower limits. We find that when comparing Seyfert 1 - 1.9 to Seyfert 2 galaxies, both the median photon index and median constrained folding energy are lower for the Seyfert 2