lightcurves on minute timescales, we have searched the brightest blazar flares for variability down to ~10 minute timescales. We find evidence for strong gamma-ray variability down to ~1 - 2 hour timescales, but not on ~10-30 minute timescales even though the photon statistics are sufficient to detect it. Using SMARTS optical/NIR, we then search for correlated rapid optical variability on similar timescales. While variability on these very short timescales is detected in a few cases, the optical variability amplitude is typically much *smaller* than the gamma-ray one. Interestingly, on ~1-3 daytimescales the optical and gamma-ray variability are instead well-correlated and of similar amplitude. We discuss the implications of this variability behavior for blazar modeling.

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106.02 – Imaging AGN Feedback in NGC 3393 with CHEERS

The CHandra Extended Emission-line Region Survey (CHEERS) is the 'ultimate' resolution X-ray imaging survey of nearby far-IR selected AGN. By comparing deep Chandra observations with complementary HST and radio data, we investigate the morphology of the extended narrow-line region on scales of <100 pc. We present new results on the gas surrounding the compton-thick AGN NGC 3393. The luminous extended narrow-line X-ray emission from this gas allows us to study the role and extent of AGN feedback as sub-kpc jets interact with the surrounding ISM.

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106.03 – Exploring the Variability Characteristics of the Fermi AGN Sample

The Fermi Gamma-Ray Space Telescope (*Fermi*) has cataloged over 3000 gamma-ray *(>100 MeV*) point sources of which ~70% are likely AGN. The AGN are predominantly representative of the radio-loud “blazar” subclass. The emission from these objects is known to be dominated by relativistic beaming and is almost always variable, often exhibiting high-amplitude flaring. To date there have been numerous studies of individual objects including multi-wavelength campaigns with some including parsec-scale radio jet morphological studies. These studies have led to new insight in to our understanding of the blazar phenomena and jet propagation. However, there remains a dearth of statistical information on the variability characteristics of the population in aggregate. What, for example, are the distributions of flare amplitudes, durations, temporal profiles and recurrence histories among the gamma-ray blazar subclasses? We present some results of our study of a large (~103) set of gamma-ray light curves. For the brightest subset we explore in greater detail their properties such as morphologies and their rise and decay timescales. We include where plausible the associated energy dependencies of these rise and decay profiles. We discuss our results in terms of the possible implications on the scale and location of jet structures associated with the emission sites and the cooling timescales of the electron population producing the gamma rays.

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106.04 – The Population of Gamma-Ray Loud NLSy1 Galaxies With Blazar-Like Properties

We report an investigation of the blazar-like properties for a subset of a sample of radio-loud NLSy1 galaxies. Using the properties of rapid and large amplitude optical and radio variability, rapid and large amplitude variations in the optical polarization and position angle, and choosing a sample that is very radio loud (R > 100), we find that that one can identify a sample of NLSy1 galaxies which exhibit properties, such as gamma ray emission, that are thought to be characteristic of the presence of relativistic jets oriented near the line-of-sight to the observer. As a result, we report the identification a number of newly discovered gamma-ray loud NLSy1 galaxies found in the Fermi database.

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106.05 – KSwAGS: A Swift X-Ray and UV Survey of the Kepler and K2 Fields

We present the first phase of the Kepler-Swift Active Galaxies and Stars survey (KSwAGS), a simultaneous X-ray and UV survey of 6 square degrees of the Kepler field. Kepler/K2 is the most precise photometer of our time, producing exquisite light curves of both stellar targets and active galaxies. We detect 93 unique X-ray sources with signal-to-noise ratio > 3 with the XRT, of which 60 have UV counterparts. The survey produces a mixture of stellar sources, extragalactic sources, and sources which we are not able to classify with certainty. We have obtained optical spectra for a majority of these targets, providing necessary parameters for study of the light curves in an astrophysical context; for example, surface gravities and rotation velocities for stars, and black hole mass estimates for AGN. Our survey provides the first X-ray and UV data for a number of known variable stellar sources, as well as a large number of new X-ray detections in this well-studied portion of the sky. The KSwAGS survey is currently ongoing in the K2 ecliptic plane fields, and provides a wide array of X-ray selected targets for photometric study with archival Kepler light curves and new data from K2.

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106.06 – Determining the X-ray Emission Mechanism for the Large-Scale Quasar Jet of 3C 111

Relativistic jets from active galactic nuclei (AGN) are powerful phenomena that transport prodigious amounts of energy and mass from the core of a galaxy out to kiloparsec or even megaparsec distances. While most spatially-resolved jets are seen in the radio, an increasing number have been discovered to emit in the optical/near-IR and/or X-ray bands. Here we discuss a spectacular example of this class, the 3C 111 jet, housed in one of the nearest, double-lobed FR II radio galaxies known. The jet itself extends over 100 kpc on each side, making it one of the longest to be seen in the radio, near-IR/optical and X-ray bands. Its length and straight nature makes it ideal for studying jet physics over many kiloparsecs. We discuss new, deep Chandra and HST observations that reveal both near-IR and X-ray emission from several components of the 3C 111 jet, as well as both the approaching and receding hotspots. The near-IR and X-ray emission in the jet is restricted to several knots, and there are important differences between the morphologies seen in the radio, near-IR, and X-ray bands. In several jet regions we detect X-ray maxima significantly upstream of the radio maxima. We analyze the broad-band spectral energy distributions of the jet components and the X-ray spectra of the brightest regions. We compare competing models of emission as they relate to frequency-dependent relativistic beaming. The morphological differences coupled with the X-ray spectral slopes lead us to favor the two-component synchrotron model and disfavor the IC/CMB model.

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