

Talk at Splinter Meeting

Splinter J

ON THE BLACK HOLE MASS - BULGE LUMINOSITY RELATION OF  
LOW-LUMINOSITY TYPE-1 QSOS

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I will present recent results of our working group at the University of Cologne (<http://www.astro.uni-koeln.de/eckart>) that have been achieved with observations from the Large Binocular Telescope.

A) The talk will focus on our work on the black hole mass ( $M_{\text{BH}}$ ) - bulge luminosity ( $L_{\text{bulge}}$ ) relation of low-luminosity type-1 QSOS (LLQSOS). LLQSOS are ideal to study the transition between the local Seyfert population and quasars at higher redshift since they are more luminous than nearby Seyferts but still close enough for detailed structural analysis. We performed a bulge-disk-bar-AGN decomposition of near-infrared images of 20 LLQSOS, many of them taken with LUCI1@LBT. We can show that these objects do not follow published  $M_{\text{BH}} - L_{\text{bulge}}$  relations for inactive galaxies (Busch+2014, A&A, 561, A140). Follow-up studies suggest that this deviation is most probably caused by a bulge overluminosity due to enhanced star formation in the circumnuclear region (Busch+2015a, A&A, 575, A128; Busch+2015b, *subm. to A&A*).

B) Also, I will present our analysis of the double-lobed radio galaxy SDSS J080800.99+483807.7 (Rashed+2013, A&A, 558, A5). Using a multiwavelength data set, including optical spectroscopy from MODS1@LBT, we discuss the possible interaction between the radio jets and the interstellar medium of the host galaxy, as well as star formation and black hole properties.

C) Finally, I will report on the progress of ongoing projects with MODS1 (Rashed et al.) and LUCI2 commissioning (Markakis/Busch et al.) data.