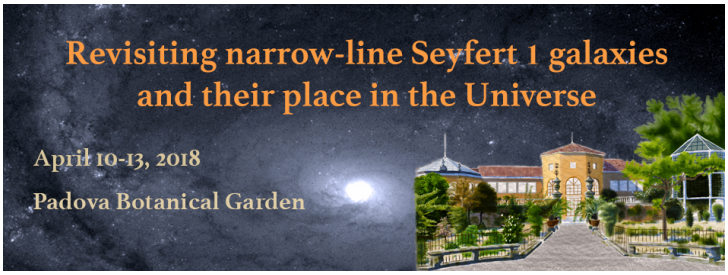

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Narrow-line Seyfert 1s: what is wrong in a name

Tuesday, 10 April 2018 10:10 (20 minutes)

Narrow-line Seyferts (NLSy1s) are an ill-defined class. Work done over the past 20 years as well as recent analyses show a continuity in properties (e.g., Balmer line profiles, blueshifts of high-ionization lines) between sources with FWHM above and below 2000 km/s, the defining boundary of NLSy1s. This finding alone suggests that comparisons between samples of NLSy1s and rest of broad-line AGNs are most likely biased. NLSy1s can be properly contextualized by their location on the quasar main sequence originally defined by Sulentic et al. 2000. At one end, NLSy1s encompass sources with strong FeII emission and associated with high Eddington ratio that hold the promise of becoming useful distance indicators; at the other end, at least some of them are sources with broad profiles seen face-on. Any rigid FWHM limit gives rise to some physical ambiguity, as the FWHM of low-ionization lines depends in a complex way on mass, Eddington ratio, orientation, and luminosity. In addition, if the scaling derived from luminosity and virial dynamics apply to the broad line regions, NLSy1s at luminosity higher than 10^47 erg/s become physically impossible. Therefore, in a broader context, a proper subdivision of two distinct classes of AGNs and quasars may be achieved by the distinction between Pop. A and B with boundary at 4000 km/s in samples at z <1, or on the basis of spectrophotometric properties which may ultimately be related to differences in accretion modes if high-luminosity quasars are considered.

Motivation

Grant

no

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