

**OLD STARBURSTS IN ACTIVE NUCLEI:
THE CONNECTION BETWEEN STARBURST
AND SEYFERT ACTIVITY.**

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Infrared spectra of selected stellar absorption features (CO 2.29, 1.62 and Si 1.59 μm) of a sample of Seyferts and many calibrators (stellar clusters, normal galaxies and well known starbursters) are presented. For HII and Seyferts we also report Br γ measurements.

The measured equivalent widths in old stellar systems and HII galaxies are remarkably similar and do not provide reliable diagnostics for distinguishing young from old/metallic systems. However, the features are much broader (i.e. the dynamical mass is larger) in ellipticals (200-300 Km/s) than in spirals and HII galaxies (100-150 Km/s) of similar luminosity.

A more sensitive age indicator is therefore the light to mass ratio (L_{H}/M) one infers from the observed H (1.65 μm) stellar luminosities and line velocity dispersions. Compared to optical lines (e.g. the CaII triplet) our method has the advantage of providing a direct measurement of the non-stellar contribution to the observed luminosity (which is important in Sy1's), and of minimizing the reddening correction.

All HII galaxies and several Sy2's exhibit $L_{\text{H}}/M > 3$ and ~ 5 times those of ellipticals and spirals, Br γ spectra indicate that the starbursts in Sy2's are older than in HII galaxies. The L_{H}/M of Sy1's is similar to that of spirals and typical of old disk/bulge populations.

These results are therefore compatible with an HII \rightarrow Sy2 \rightarrow Sy1 evolutionary scheme where the two Seyfert types are intrinsically different objects.