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From analysis of the line and continuum luminosities using an evolutionary starburst model, we derive for each hot spot star forming rate 0.1–0.6 $M_\odot yr^{-1}$, and supernova rate 0.4–11 $\times$ 10^{-3} yr^{-1}. The age of the current burst is 8–17 Myr in the circumnuclear region, and $\sim$ 40 Myr in the nucleus. The circumnuclear hot spots lie in the area of H II regions and starburst galaxies in the [Fe II] /Brγ vs. H_2 /Brγ diagram, whereas the nucleus has line ratios similar to Seyfert nuclei. The multiwavelength evidence for and against hidden Seyfert activity in NGC 1808, and implications for the evolution of starburst galaxies are discussed.

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STARBURSTS INDUCED BY INTERACTIONS IN GROUPS OF GALAXIES

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We present broad and narrow band imaging of interacting galaxies belonging to three Hickson compact groups (HCG16, HCG31 and HCG95). This work is aimed at studying the properties of induced star formation in interacting galaxies, and the parameters that govern the strength of the induced starbursts. For this purpose, we use the emission of Hα as an indicator of the current star formation activity. In addition, we obtain $(B - R)$ color maps, which are good tracers of the evolved stellar population.

Some of the properties of the starbursts of our sample of galaxies are:

1) All galaxies in our sample are suffering ongoing interactions and have developed some kind of tidal features, like bridges or tails.

2) The location of the star forming regions varies from the center of the galaxy, in the case of HCG95a and HCG16a, to the external tidal bridges, as is the case for HCG95b. Almost the whole surface of HCG31a and HCG31c show Hα emission, as it is expected from two galaxies that are experiencing a strongly disruptive interaction.

3) The Hα surface brightness varies by more than two orders of magnitude. The extreme cases are HCG95a, which is an elliptical galaxy showing a small burst near the nucleus, and HCG31a and HCG31c, which have very extended Hα emission.

4) The surface brightness *normalized* to the Hα area of the galaxy ranges a more restricted interval. Except for HCG31a and HCG31c, the normalized values remain roughly constant for the galaxies of the sample.

So, the analysis of our limited sample suggests that interactions between galaxies produce starbursts in the galaxies involved in such processes, but the intensity and location of these starbursts strongly depend on the intial conditions and the relative positions of the interacting galaxies.

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STARBURST–BLACK HOLE MODELS OF ACTIVE GALACTIC NUCLEI

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We have calculated hydrodynamical models of the nuclear inter-stellar medium (nISM) of starburst-black hole active galactic nuclei. In these models, mass is injected into the nISM throughout the nucleus by the stellar winds, supernovae and collisions of stars in a compact stellar cluster surrounding a central black hole. It then moves under the influence of gravity and radiative forces until it flows out of the nucleus or is accreted onto the black hole. The overall form of the flow is determined by two parameters: a) the ratio of the velocity dispersion of stars in the cluster core to the sound speed in the nISM; and b) the ratio of the velocity with which gas is driven away from the central black hole to nuclear starburst stellar cluster velocity dispersion. The velocity dispersion and sound speeds are measures of the gravitational and thermal energies in the nISM, and therefore of whether or not the gas will (initially) be bound in the core or escape in a thermal wind. When a reasonable mass of gas is retained by the gravity of the stellar cluster, the black hole can have a significant global effect on the flow. The net force from the black hole combines its gravity and radiative forces. The latter are axially symmetric because the radiation from the central accretion disc is rather greater along its axis than along its plane. The interplay between the central wind driven by the radiation and the cluster mass-loss can generate complex structures in the flowing nISM. Confined meridional circulation, long sequences of irregular explosions and strong, well-collimated jets have been found.

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