

TIDAL FEATURES IN INTERACTING GALAXIES

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We use OSIRIS in its long-slit mode to look for mass transfer and induced star formation in the interacting galaxy pair KPG 468.

It is known that galaxy interactions lead to enhanced star formation (SF) (see review by Struck 1999). However, the intensity of this enhancement and its location can be quite varied (e.g., Barton Gillespie, Geller, & Kenyon; Bergvall, Laurikainen, & Aalto (2003); Knapen & James 2009).

Using numerical simulations, Di Matteo et al. (2008) found that interactions and mergers in general trigger only SF enhancements a factor 3–4 with respect to that of isolated galaxies. Simulations also show that, moderate SF can occur in tidal structures (Di Matteo et al. 2007).

In tidal structures, it is the nature, rather than the quantity of SF that is of interest since it can be related to the formation of globular clusters and tidal dwarfs. How much gas has been transferred already, and how much will yet be pulled out? How much is fueled toward the central parts of the galaxy, and how much is converted into stars in the outskirts?

NGC 5953/54 (KPG 468) is an interacting S0/a + Scd galaxy pair. Both galaxies show prominent SF regions and are separated by a projected distance of ~ 6 kpc. A bridge of gas and stars is seen between them. Kinematics of the ionized gas along the bridge (Hernández-Toledo et al. 2003) show a velocity gradient that seems to join one end of NGC 5953 with the end of NGC 5954.

We used OSIRIS in its long-slit mode with a slit width of 0.8 and the R1000B grism. Exposure time was between 600 s to 1200 s depending on the region observed. Long-slit observations were done on several regions of KPG 468 in order to observe the bridge between the two galaxies and the main bodies of both galaxies in order to compare the bridge observations with each of the galaxies (Figure 1).

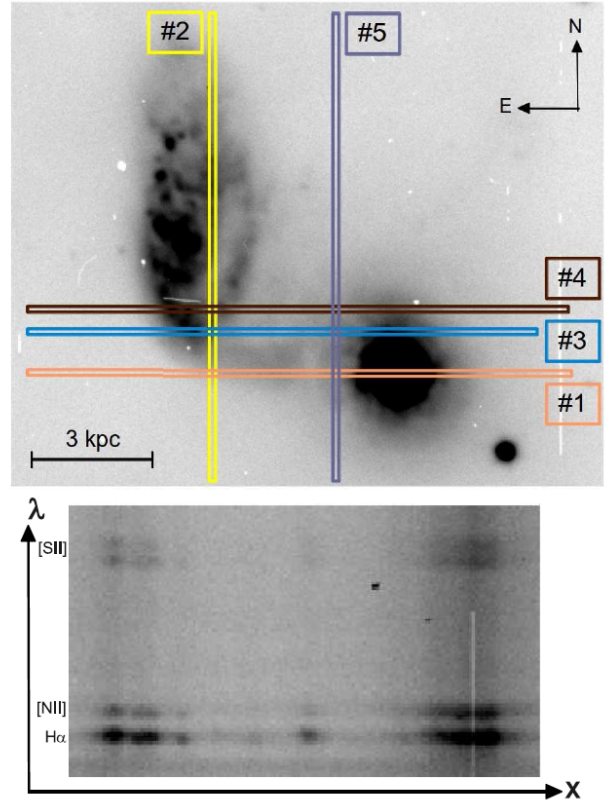


Fig. 1. Top: Direct image of KPG 468. Slit positions are indicated. GTC direct image taken with the Sloan *g* filter, $t_{\text{exp}} = 60$ s. Bottom: Spectrum corresponding to slit #3, $t_{\text{exp}} = 1200$ s. Only the part corresponding to the $H\alpha$, [NII] and [SII] lines is shown.

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