

# Quasar activity in the neighbor Universe

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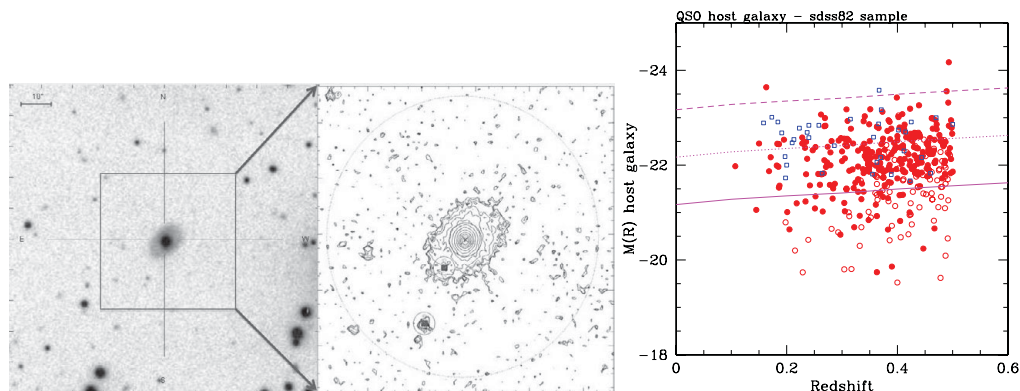
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**Abstract.** We investigate the properties of the galaxies hosting quasars in  $\sim 400$  low redshift ( $z < 0.5$ ) SDSS QSO that are in the “Stripe 82” sky area. For this region deep ( $r \sim 22.4$  mag) u, b, v, r and i images are available and allow us to study both the host galaxies and the Mpc scale environments. This sample outnumbers previous studies of low- $z$  QSOs. We present preliminary results of the properties of quasars activity and in particular we focus on the relationships among host galaxy luminosity, black hole mass, radio emission and the surrounding galaxy environments. We select from the SDSS - QSO Catalogue all the QSOs in the range of redshift  $0.1 < z < 0.5$  and in the Stripe82 region. This gives a total of 416 QSO. In this sample we are dominated by radio quiet quasars (about 5% are radio loud). In Fig. 1 we report the distribution of QSO in the plane redshift- $M_R$  ( $H_0 = 70$ ). The mean redshift of the sample is  $\langle z \rangle = 0.39$  and the average absolute magnitude is:  $\langle M_i \rangle = -22.68$ . We implemented an automated procedure using AIDA (Uslenghi & Falomo 2011) to decompose the QSO images into nucleus and host galaxy luminosity. After masking of all contaminating sources in the field a 2D fitting is performed using PSF + galaxy model. In Fig. 1 we show an example of a QSO image in the sample and the distribution of the host galaxy absolute magnitude of the resolved objects.

**Keywords.** galaxies: quasars: general



**Figure 1.** Left: i band image from Stripe82 and the isophotes of a zoom of the central region. Right:  $M_R$ - $z$  relation. Filled and open red points are for resolved and marginally resolved QSO respectively. Blue open squared represent QSOs from HST images.

## Reference

Uslenghi, M. & Falomo, R. 2011, *Proc. SPIE* 8135, 813524