

CLASS B0218+357 and the Hubble constant

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In principle gravitational lenses provide a one-step route to the determination of the Hubble constant on cosmological scales, if the background source is variable and a time delay can be determined between variations of the lensed images. In practice, the major systematic problem with the method is the degeneracy between H_0 and the slope of the mass distribution; the accurate mass modelling required is not usually possible given the constraints available. In the case of CLASS B0218+357 the combination of VLBI structure and the Einstein ring yield unusually good constraints, and the only major missing piece in a well-constrained mass model is the determination of the position of the centre of the lensing galaxy. In B0218+357 this is difficult because of the small (334-mas) scale of the system. However, using new HST/ACS data we have been able to make a much better determination of the galaxy central position, leading to an H_0 estimate with a relatively low level of systematic errors due to the mass model.