
Mesure de H_0 avec le quasar lentillé RXJ1131-1231

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Résumé

1 Introduction

3 Méthodologie

$$c\Delta t_{ij} = D_{\Delta t} \left(\frac{(\theta_i - \beta)^2}{2} - \frac{(\theta_j - \beta)^2}{2} - \psi(\theta_i) + \phi(\theta_j) \right) \quad (1)$$

$$D_{\Delta t} \equiv (1 + z_\ell) \frac{D_\ell D_s}{D_{\ell s}} \propto H_0^{-1} \quad (2)$$

2 Théorie

$$\nabla_\theta^2 \psi = 2\kappa(\theta) \quad (3)$$

$$\psi(\theta) = \frac{1}{\pi} \int_{\mathbb{R}^2} \kappa(\theta') \ln(\theta - \theta') d^2\theta' \quad (4)$$

$$\kappa(\theta) \equiv \frac{\Sigma(\theta)}{\Sigma_{\text{cr}}} \quad (5)$$

$$\Sigma_{\text{cr}} \equiv \frac{c^2}{4\pi G} \frac{D_s}{D_\ell D_{\ell s}} \quad (6)$$

$$\beta = \theta - \alpha(\theta) \quad (7)$$

$$\alpha(\theta) = \frac{1}{\pi} \int_{\mathbb{R}^2} \kappa(\theta') \frac{\theta - \theta'}{|\theta - \theta'|} d^2\theta' \quad (8)$$

$$\kappa(\theta) = \frac{3-n}{2} \left(\frac{\theta_E}{\sqrt{\frac{\theta_1^2}{1-e} + \theta_2^2(1-e)}} \right)^{n-1} \quad (9)$$

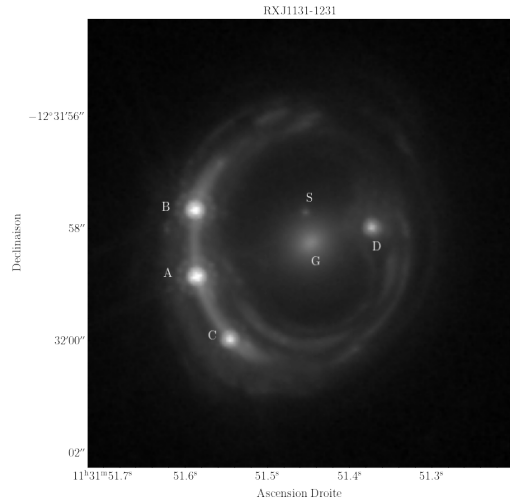


FIGURE 1

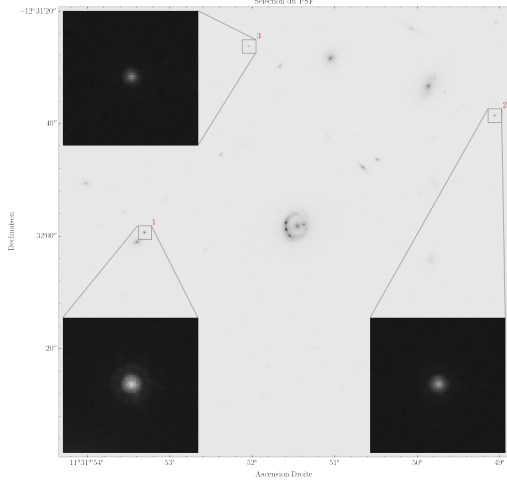


FIGURE 2

TABLE 1: Positions relatives des 4 images du quasar

Images	θ_1 ($''$)	θ_2 ($''$)
A	1.8998	0.5659
B	1.8717	-0.6207
C	1.2654	-1.7385
D	-1.3217	0.2568

5 Conclusion

$$\log P(\underbrace{\mathbf{d}_{ACS}}_{\mathcal{D}} | \underbrace{\theta_E, e, n, \gamma, \eta, \mathbf{s}}_{\mathcal{M}}) \propto -\frac{1}{2} \sum_{i=1}^{|\mathcal{D}|} \frac{(d_{ACS,i} - d_{\mathcal{M},i})^2}{\sigma_i^2} - \frac{1}{2} \sum_{i < j}^4 \frac{(\beta_i - \beta_j)^2}{(d\theta)^2} \quad (10)$$

$$\log P(\Delta t | D_{\Delta t}, \mathcal{M}) \propto -\frac{1}{2} \sum_i \frac{(\Delta t_i - \Delta t(D_{\Delta t}, \mathcal{M}))^2}{\sigma_{\Delta t}^2} + \log P(\mathbf{d}_{ACS} | \mathcal{M}) \quad (11)$$

4 Résultats et discussion

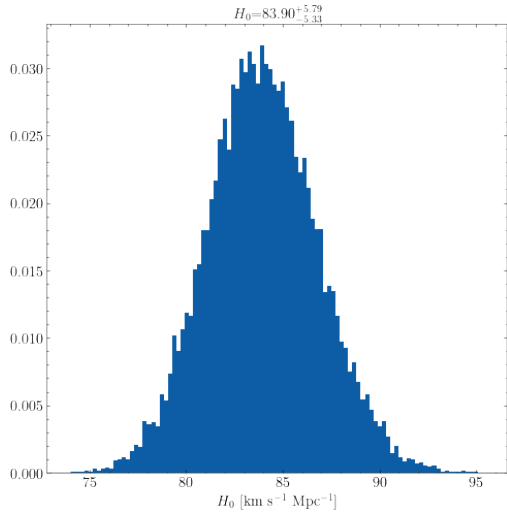


FIGURE 4

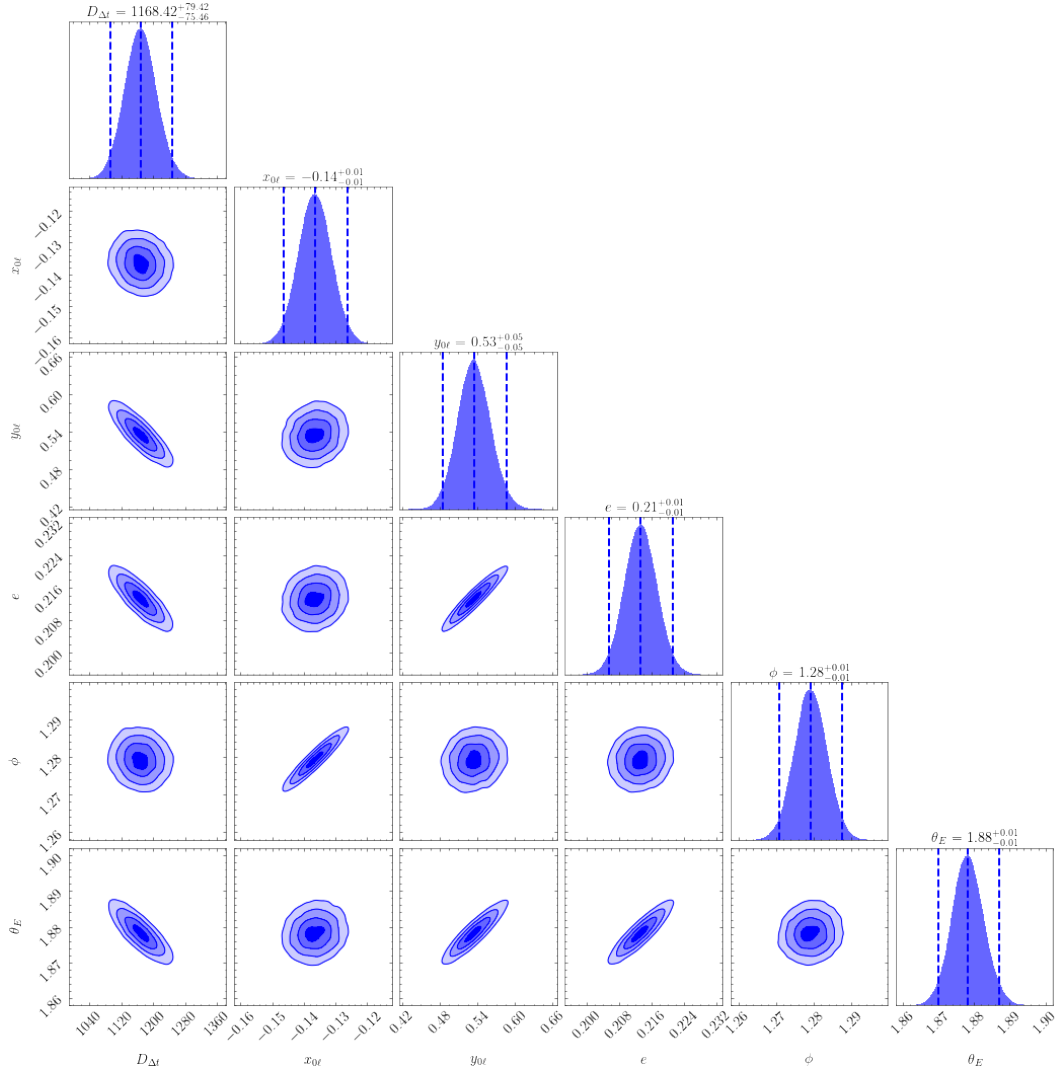


FIGURE 3