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Authors	RAMPAZZO, Roberto, MAZZEI, Paola, Marino, A., TRINCHIERI, Ginevra, USLENGHI, MICHELA, WOLTER, Anna Luisa Maria
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The evolution of S0s with UV bright rings A SWIFT-UVOT study

R. Rampazzo¹, P. Mazzei¹, A. Marino¹, G. Trinchieri², M. Uslenghi³
and A. Wolter²

¹INAF Osservatorio Astronomico di Padova, Vicolo dell'Osservatorio 5, 35122 Padova, Italy

²INAF Osservatorio Astronomico di Brera, Via Brera 28, 20121 Milano, Italy

³INAF-IASF, Via Bassini 15, 20133 Milano, Italy

Abstract. We report about an ongoing study of the evolution of 24 S0s with UV-bright ring/arm-like structures observed with SWIFT-UVOT and interpreted via SPH simulations with chemo-photometric implementation.

Keywords. galaxies: elliptical and lenticular, cD, galaxies: photometry, galaxies: evolution

1. Introduction

A significant fraction of S0s is far from being passively evolving. Signatures of activity (e.g. star formation/AGN) maximize their presence in their centre (e.g. Rampazzo *et al.* 2013). However, spectacular signatures of activity have been extensively mapped by GALEX. FUV bright rings, pseudo-rings and arm-like structures in the disk, shells and tails in the galaxy outskirts are revealed (Thilker *et al.* 2007; Salim & Rich 2010; Marino *et al.* 2011). Sometimes UV-structures are barely visible in the optical bands.

2. The project and few preliminary results

We select from the ARRAKIS compilation of galaxies with rings (Comerón *et al.* 2014) 24 S0s observed with SWIFT-UVOT. We obtained their luminosity profiles and structure and their SED. These information single out, among a grid of SPH simulations with chemo-photometric implementation, the evolution of these S0s providing the history of the development of their ring/arm-like structures (see Mazzei *et al.* 2014a; Mazzei *et al.* 2014b). These are found in UV images of S0s with different family classification (see e.g. Laurikainen *et al.* 2010). UV bright ring/arm-like structures have different shapes, from very diffuse (IC 2006) to filamentary (NGC 1543), to irregular (NGC 1533). SPH simulations suggest that mergers and interactions drive the evolution of ring/arm-like structures which mark transient phases during the galaxy assembly history.

References

- Comerón, S., Salo, H., Laurikainen, E., *et al.* 2014, *A&A*, 562, A121
Laurikainen, E., Salo, H., Buta, R., *et al.* 2010, *MNRAS*, 405, 1089
Marino, A., Bianchi, L., Rampazzo, R., *et al.* 2011, *ApJ*, 736, 154
Mazzei, P., Marino, A., & Rampazzo, R. 2014a, *ApJ*, 782, 53
Mazzei, P., Marino, A., Rampazzo, R., *et al.* 2014b, *Adv. Sp. Res.*, 53, 950
Salim, S. & Rich, R. M. 2010, *ApJ*, 714, L290
Rampazzo, R., Panuzzo, P., Vega, O., *et al.* 2013, *MNRAS*, 432, 374
Thilker, D. A., Bianchi, L., Meurer, G., *et al.* 2007, *ApJS*, 173, 538