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J/A+A/578/A30 Emission-line galaxies in ZwCl0024.0+1652 (Sanchez-Portal+, 2015)

GLACE survey: OSIRIS/GTC tuneable filter H α imaging of the rich galaxy cluster Zw Cl0024.0+1652 at $z=0.395$.

I. Survey presentation, TF data reduction techniques, and catalogue.

Sanchez-portal M., Pintos-Castro I., Perez-Martinez R., Cepa J., Perez Garcia A.M., Dominguez-Sanchez H., Bongiovanni A., Serra A.L., Alfaro E., Altieri B., Aragon-Salamanca A., Balkowski C., Biviano A., Bremer M., Castander F., Castaneda H., Castro-Rodriguez N., Chies-santos A.L., Coia D., Diaferio A., Duc P.A., Ederoclite A., Geach J., Gonzalez-Serrano I., Haines C.P., Mcbreen B., Metcalfe L., Oteo I., Perez-Fournon I., Poggianti B., Polednikova J., Ramon-Perez M., Rodriguez-Espinosa J.M., Santos J.S., Smail I., Smith G.P., Temporin S., Valtchanov I.

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=[2015A&A...578A..30S](#) (SIMBAD/NED BibCode)

ADC_Keywords: Clusters, galaxy ; Active gal. nuclei ; Photometry, H-alpha ; Spectroscopy

Keywords: galaxies: clusters: individual: ZwCl0024.0+1652 - galaxies: photometry - galaxies: star formation - galaxies: active

Abstract:

The cores of clusters at $0 \leq z \leq 1$ are dominated by quiescent early-type galaxies, whereas the field is dominated by star-forming late-type galaxies. Clusters grow through the accretion of galaxies and groups from the surrounding field, which implies that galaxy properties, notably the star formation ability, are altered as they fall into overdense regions. The critical issues for understanding this evolution are how the truncation of star formation is connected to the morphological transformation and what physical mechanism is responsible for these changes. The GaLaxy Cluster Evolution Survey (GLACE) is conducting a thorough study of the variations in galaxy properties (star formation, AGN activity, and morphology) as a function of environment in a representative and well-studied sample of clusters. To address these questions, the GLACE survey is making a deep panoramic survey of emission line galaxies (ELG), mapping a set of optical lines ([OII], [OIII], H β and H α /[NII] when possible) in several galaxy clusters at $z \sim 0.40$, 0.63 , and 0.86 . Using the tunable filters (TF) of the OSIRIS instrument at the 10.4m GTC telescope, the GLACE survey applies the technique of TF tomography: for each line, a set of images are taken through the OSIRIS TF, each image tuned at a different wavelength (equally spaced), to cover a rest frame velocity range of several thousand km/s centred on the mean cluster redshift, and scanned for the full TF field of view of an 8arcmin diameter. Here we present the first results of the GLACE project, targeting the H α /[NII] lines in the intermediate-redshift cluster ZwCl0024.0+1652 at $z=0.395$. Two pointings have been performed that cover $\sim 2 r_{\text{vir}}$.

Description:

Two OSIRIS/GTC pointings using the red TF were planned and executed towards Cl0024. The first one (carried out in GTC semesters 09B, 10A, and 13B; hereafter referred to as "centre position") targeted the H α /[NII], H α and [OIII] lines. The second pointing (hereafter referred to as "offset position") was carried out in semesters 10B and 13B, and it targeted the same emission lines.

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table5.dat	70	174	Catalogue of unique ELGs of Cl0024

Byte-by-byte Description of file: [table5.dat](#)

Bytes	Format	Units	Label	Explanations
1-	6	A6	---	ID Name, NNNN_C or NNNN_0 (1)
9-	10	I2	h	RAh Right ascension (J2000)
12-	13	I2	min	RAm Right ascension (J2000)
15-	19	F5.2	s	RA s Right ascension (J2000)
	21	A1	---	DE- Declination sign (J2000)
22-	23	I2	deg	DEd Declination (J2000)
25-	26	I2	arcmin	DEm Declination (J2000)
28-	31	F4.1	arcsec	DEs Declination (J2000)
33-	38	F6.4	---	z [0.37/0.43] Redshift
40-	42	I3	10-20W/m2	FHa [4/114] H α flux (10^{-17} erg/cm 2 /s)
44-	45	I2	10-20W/m2	e_FHa [1/30] rms uncertainty on FHa
47-	49	I3	10-20W/m2	F[NII] [1/66]?=- [NII] flux (10^{-17} erg/cm 2 /s)
51-	52	I2	10-20W/m2	e_F[NII] [1/38]?=- rms uncertainty on F[NII]

54- 58	F5.1	0.1nm	EWHa	[6/426] H α equivalent width
60- 64	F5.1	0.1nm	EWHaN	[11/438]?=- H α + [NII] equivalent width
66- 70	A5	---	Class	Galaxy type: "SF" (star-forming), "BLAGN" (Broad-line), or "NLAGN" (narrow-line)

Note (1): The identifiers with C correspond to sources gathered from the central pointing, while those with 0 correspond to sources gathered from the offset one.

History:

From electronic version of the journal

(End) Patricia Vannier [CDS] 29-Jul-2015

The document above follows the rules of the [Standard Description for Astronomical Catalogues](#); from this documentation it is possible to generate *f77* program to load files [into arrays](#) or [line by line](#)

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