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Title	VizieR Online Data Catalog: Grism Lens-Amplified Survey from Space (GLASS). I. (Treu+, 2015)
Authors	Treu, T., Schmidt, K. B., Brammer, G. B., Vulcani, Benedetta, Wang, X., Bradac, M., Dijkstra, M., Dressler, A., FONTANA, Adriano, Gavazzi, R., Henry, A. L., Hoag, A., Huang, K. -H., Jones, T. A., Kelly, P. L., Malkan, M. A., Mason, C., Pentericci, L., POGGIANTI, Bianca Maria, Stiavelli, M., Trenti, M., von der Linden, A.
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J/ApJ/812/114 Grism Lens-Amplified Survey from Space (GLASS). I. (Treu+, 2015)

The Grism Lens-Amplified Survey from Space (GLASS).
I. Survey overview and first data release.

Treu T., Schmidt K.B., Brammer G.B., Vulcani B., Wang X., Bradac M.,
Dijkstra M., Dressler A., Fontana A., Gavazzi R., Henry A.L., Hoag A.,
Huang K.-H., Jones T.A., Kelly P.L., Malkan M.A., Mason C., Pentericci L.,
Poggianti B., Stiavelli M., Trenti M., von der Linden A.

<Astrophys. J., 812, 114 (2015)>
=2015ApJ...812..114T (SIMBAD/NED BibCode)

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Keywords: gravitational lensing: strong

Abstract:

We give an overview of the Grism Lens Amplified Survey from Space (GLASS), a large Hubble Space Telescope program aimed at obtaining grism spectroscopy of the fields of 10 massive clusters of galaxies at redshift z=0.308-0.686, including the Hubble Frontier Fields (HFF). The Wide Field Camera 3 (WFC3) yields near-infrared spectra of the cluster cores covering the wavelength range 0.81-1.69µm through grisms G102 and G141, while the Advanced Camera for Surveys in parallel mode provides G800L spectra of the infall regions of the clusters. The WFC3 spectra are taken at two almost orthogonal position angles in order to minimize the effects of confusion. After summarizing the scientific drivers of GLASS, we describe the sample selection as well as the observing strategy and data processing pipeline. We then utilize MACS J0717.5+3745, a HFF cluster and the first one observed by GLASS, to illustrate the data quality and the high-level data products. Each spectrum brighter than H_{AB}=23 is visually inspected by at least two co-authors and a redshift is measured when sufficient information is present in the spectra. Furthermore, we conducted a thorough search for emission lines through all of the GLASS WFC3 spectra with the aim of measuring redshifts for sources with continuum fainter than H_{AB}=23. We provide a catalog of 139 emission-line-based spectroscopic redshifts for extragalactic sources, including three new redshifts of multiple image systems (one probable, two tentative).

Description:

In this paper we give an overview of Grism Lens Amplified Survey from Space (GLASS; PI Treu; GO 13459) and we present the first release of the data for MACS J0717.5+3745, the first cluster targeted by the survey. Spectra for 1151 galaxies down to magnitude H_{AB}=24 (F140W) have been visually inspected by members of our team to ensure quality control.

GLASS is a cycle-21 large program with the Hubble Space Telescope (HST), targeting 10 massive clusters, including the 6 Frontier Fields, using the WFC3 and ACS grisms. The program consists of 140 primary orbits (with the G102 and G141 grisms; range 0.81-1.69µm) and 140 parallel orbits (with the G800L grism).

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table1.dat	93	10	Sample properties
table3.dat	67	247	Redshift catalog for MACS J0717.5+3745

See also:

- B/hst : HST Archived Exposures Catalog (STScI, 2007)
- II/261 : GOODS initial results (Giavalisco+, 2004)
- J/AJ/149/178 : Redshift cat. of galaxies in GOODS-South field (Morris+, 2015)
- J/ApJ/811/29 : GLASS. IV. Lensing cluster Abell 2744 (Wang+, 2015)
- J/ApJ/803/34 : z~4-10 galaxies from HST legacy fields (Bouwens+, 2015)
- J/ApJS/211/21 : Spectroscopic redshifts of galaxies in MACS (Ebeling+, 2014)
- J/ApJS/208/20 : Nine-year WMAP point source catalogs (Bennett+, 2013)
- J/ApJ/772/48 : Emission-line galaxies from PEARS. II. (Pirzkal+, 2013)
- J/ApJ/765/140 : Stacked spectra of SDSS star forming galaxies (Andrews+, 2013)
- J/MNRAS/428/1128 : UDS/COSMOS HiZELS galaxies (Sobral+, 2013)
- J/ApJS/199/25 : CLASH sources for MACS1149.6+2223 (Postman+, 2012)
- J/AJ/141/14 : HST WFC3 ERS : emission-line galaxies (Straughn+, 2011)
- J/ApJ/648/7 : Lyα emitters at z=6.5 in SDF (Kashikawa+, 2006)
- J/ApJ/630/206 : Hα data for 3 EDisCS galaxy clusters (Finn+, 2005)
- J/ApJ/591/53 : I photometry of Cl 0024+16 (Treu+, 2003)
- J/ApJS/122/51 : Spectroscopic cat. of 10 rich galaxy clusters (Dressler+ 1999)
- http://archive.stsci.edu/prepds/glass/ : GLASS on MAST home page

Byte-by-byte Description of file: table1.dat

Bytes	Format	Units	Label	Explanations
1- 14	A14	---	Cl	Cluster name
16- 17	I2	h	RAh	Hour of right ascension (J2000)
19- 20	I2	min	RAm	Minute of right ascension (J2000)
22- 25	F4.1	s	RAs	Second of right ascension (J2000)
27	A1	---	DE-	Sign of declination (J2000)
28- 29	I2	deg	DEd	Degree of declination (J2000)
31- 32	I2	arcmin	DEm	Arcminute of declination (J2000)
34- 35	I2	arcsec	DEs	Arcsecond of declination (J2000)
37- 41	F5.3	---	z	[0.3/0.7] Redshift
43- 52	A10	---	HST	Main sources of HST imaging (1)
54- 60	A7	---	SST	Main sources of Spitzer imaging (2)
62- 66	F5.2	10+37W	Lx	[8.1/47.4] X-ray luminosity in 10^{44}erg/s (3)
68- 71	F4.2	10+37W	e_Lx	[0.3/1.6] Lx uncertainty
73- 77	F5.2	10+14Msun	M500	[6.6/25] M_{500} (from M_{gas}) in $10^{14}M_{\odot}$
79- 82	F4.2	10+14Msun	e_M500	[0.8/3.3] M500 uncertainty
84- 93	A10	---	DR1	First release (4)

Note (1):
HFF = Hubble Frontier Field initiative (J. Lotz et al. 2015, in preparation)
http://www.stsci.edu/hst/campaigns/frontier-fields/
CLASH = Cluster Lensing And Supernova survey with Hubble (Multi-Cycle Treasury program 12065; PI: Marc Postman).
http://archive.stsci.edu/prepds/clash/

Note (2): SURFSUP = Spitzer UltRa Faint SUrvey Program: Cluster Lensing and Spitzer Extreme Imaging Reaching Out to z~7 (#90009 PI Bradac, co-PI Schrabback) is a joint Spitzer and HST Exploration Science Spitzer program.
http://bradac.physics.ucdavis.edu/SurfsUp.html
http://irsa.ipac.caltech.edu/data/SPITZER/Frontier/

Note (3): X-ray luminosity from Mantz et al. 2010MNRAS.406.1773M

Note (4): Target date for the first public data release (F=Fall, S=Summer, W=Winter).

Byte-by-byte Description of file: table3.dat

Bytes	Format	Units	Label	Explanations
1- 5	I05	---	ID	[00036-92358] GLASS identifier (00036-02574 and 90082-92358) (1)
7- 18	F12.8	deg	RAdeg	[109.36/109.42] Right Ascension (J2000)
20- 31	F12.9	deg	DEdeg	[37.72/37.78] Declination (J2000)
33- 40	F8.5	---	z	[0/2.6]?=-1 GLASS redshift (2)
42- 48	F7.5	---	q_z	[0/4]? Quaility of z (3)
50- 56	F7.5	---	f_z	[0/1] Flag indicating multiple z solutions (4)
58- 67	A10	---	Note	Additional notes (5)

Note (1): IDs on the format 0xxxx refer to the publicly available GLASS MACS0717 v001 data release available at
http://archive.stsci.edu/prepds/glass/
IDs on the format 9xxxx refer to a data reduction with more aggressive SExtractor de-blending and detection parameters, to accommodate detection of object near bright objects not de-blended in the default data-release reduction. These reduction products are available upon request to the authors.

Note (2): Assigned from visual inspection (using GLASS inspection GUI for redshifts (GiGz) v1.0:
http://github.com/kasperschmidt/GLASSinspectionGUIs)
of the Individual spectra and automatic redshift fits to the GLASS spectra combined with the CLASH photometry.
Star (z=0.00000) are also indicated in column Note (36 sources).

Note (3): From the GiGz inspections. Fractional qualities come from the combination of multiple redshift inspections. Quality of z as follows:
- 0 = no redshift (58 sources);
- 1 = tentative redshift (14 sources);
- 2 = possible redshift;
- 3 = probable redshift;
- 4 = secure redshift.

Note (4): The entry is 1 if the redshift is based on a single line and multiple identifications are possible. Fractional values come from the combination of multiple visual inspections.

Note (5): Multiple image names follow the convention of Diego et al. 2015MNRAS.451.3920D

History:
From electronic version of the journal

References:

Treu et al.	Paper I.	2015ApJ...812..114T	This catalog.
Jones et al.	Paper II.	2015AJ....149..107J	

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  Schmidt et al.    Paper III.   2016ApJ...818...38S
  Wang et al.       Paper IV.    2015ApJ...811...29W   J/ApJ/811/29
  Vulcani et al.    Paper V.     2015ApJ...814..161V
  Hoag et al.       Paper VI.    2016ApJ...831..182H   J/ApJ/831/182
  Vulcani et al.    Paper VII.   2016ApJ...833..178V   J/ApJ/833/182
  Vulcani et al.    Paper VIII.  2017ApJ...837..126V
  Morishita et al.  Paper IX.    2017ApJ...835..254M   J/ApJ/835/254
  Wang et al.       Paper X.     2017ApJ...837...89W
  Schmidt et al.    Paper XI.    2017ApJ...839...17S
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(End) Prepared by [AAS], Emmanuelle Perret [CDS] 11-Feb-2016

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