Welcome info

- **Registration fee: lunch and coffee breaks. 18€ per day.**
- **Wifi network: UCM-CONGRESO**

  access key: congresos2011

  username: shards@congreso.ucm.es

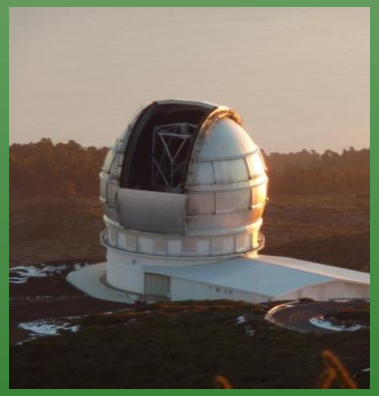
  password: shards13
- **Dinner tonight: La Vaca Argentina, Calle de Gaztambide, 50. http://goo.gl/maps/XG6tm. 35€ menu. Final headcount!!!**
- **Please give us PDF files of your presentations so we can post them in the private SHARDS webpage.**

Update on SHARDS

Pablo G. Pérez-González, Antonio Cava, Guillermo Barro

SHARDS Team: G. Barro, M. Balcells, N. Cardiel, A. Cava, J. Cenarro, J. Cepa, S. Charlot, A. Cimatti, C. Conselice, E. Daddi, J. Donley, D. Elbaz, I. Ferreras, J. Gallego, R. Gobat, R. Guzmán, A. Renzini, G. Rieke, J.M. Rodríguez-Espinosa, L. Tresse, I. Trujillo, V. Villar, J. Zamorano

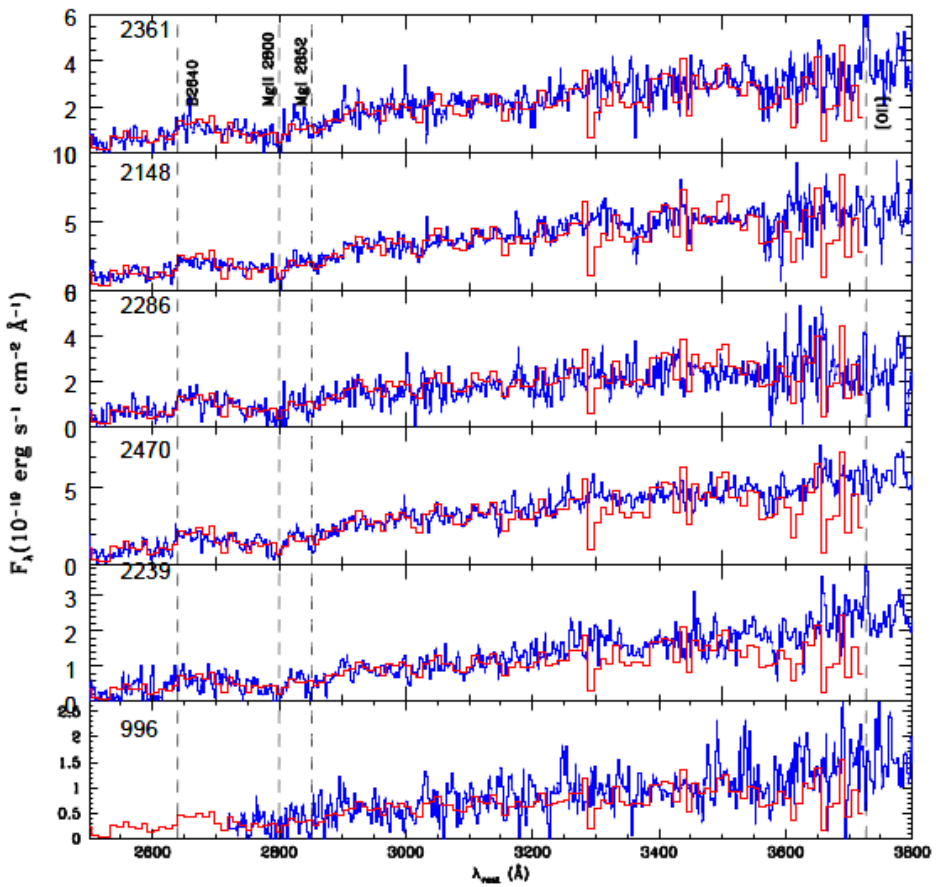
Extended SHARDS Team: A. Alonso-Herrero, J. de Diego, C. Eliche Moral, O. González-Martín, A. Hernán-Caballero, K. Lai, J.A. López Aguerri, J. Masegosa, C. Muñoz Tuñón, M. Prieto, J. Rodríguez-Zaurín, J. Sánchez Almeida.

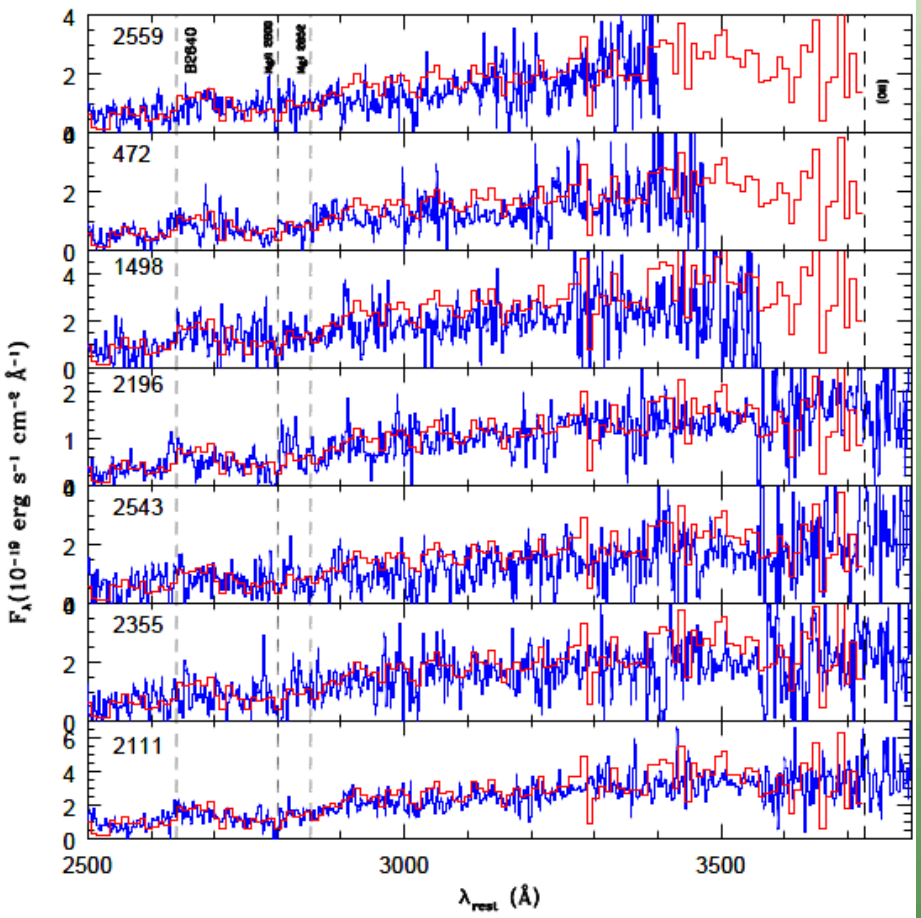


How do you form galaxies like these?

SHARDS Team Meeting I
Madrid, Jun 20-21, 2013

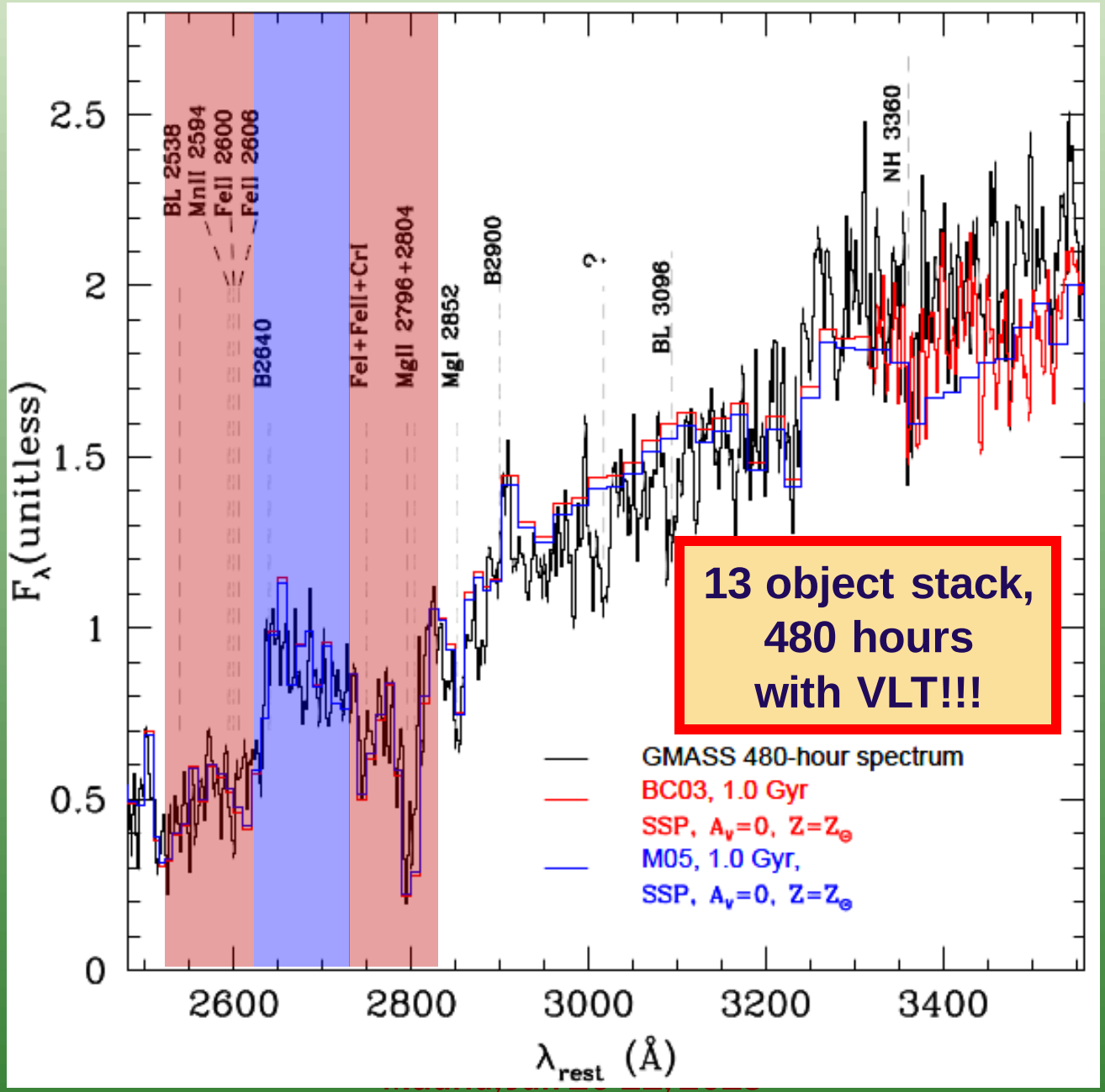
High-z red&dead galaxies in detail: spectra





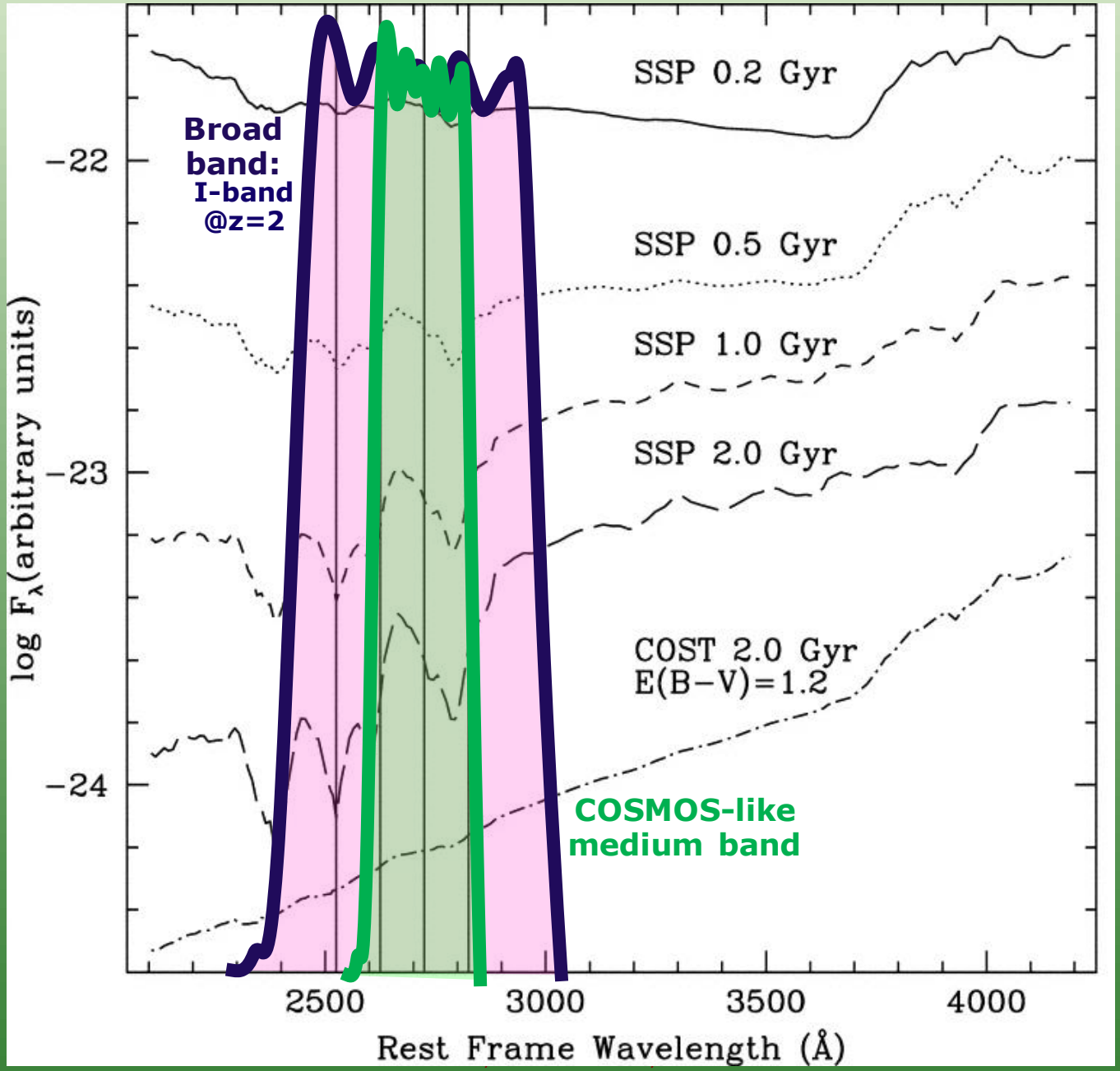
Cimatti et al. (2008)

Accurate stellar population synthesis @high-z



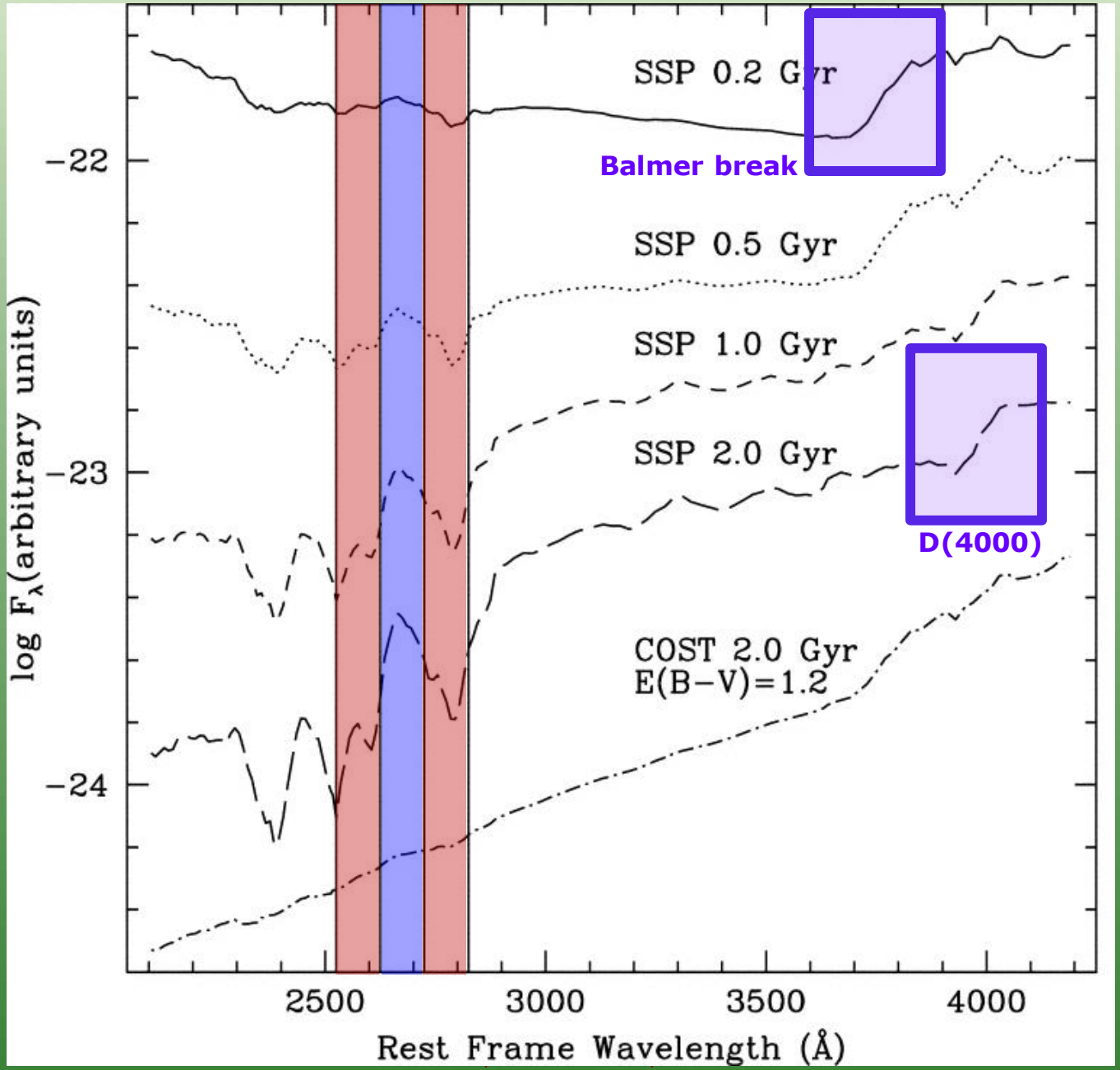
Cimatti et al. (2008)

Spectral indices as age indicators: e.g., Mg_{UV}



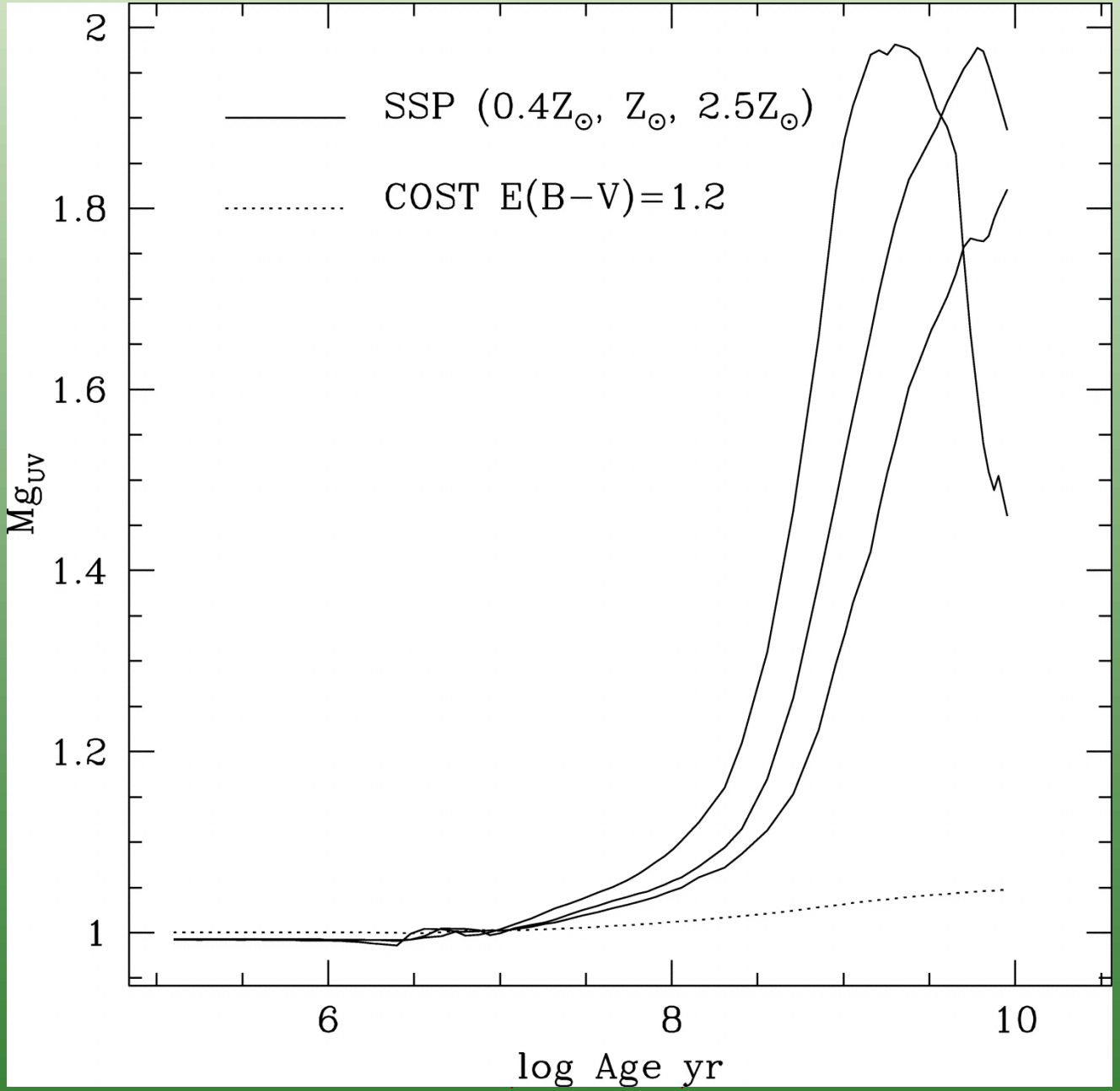
Daddi et al. (2005)

Spectral indices as age indicators: e.g., Mg_{UV}



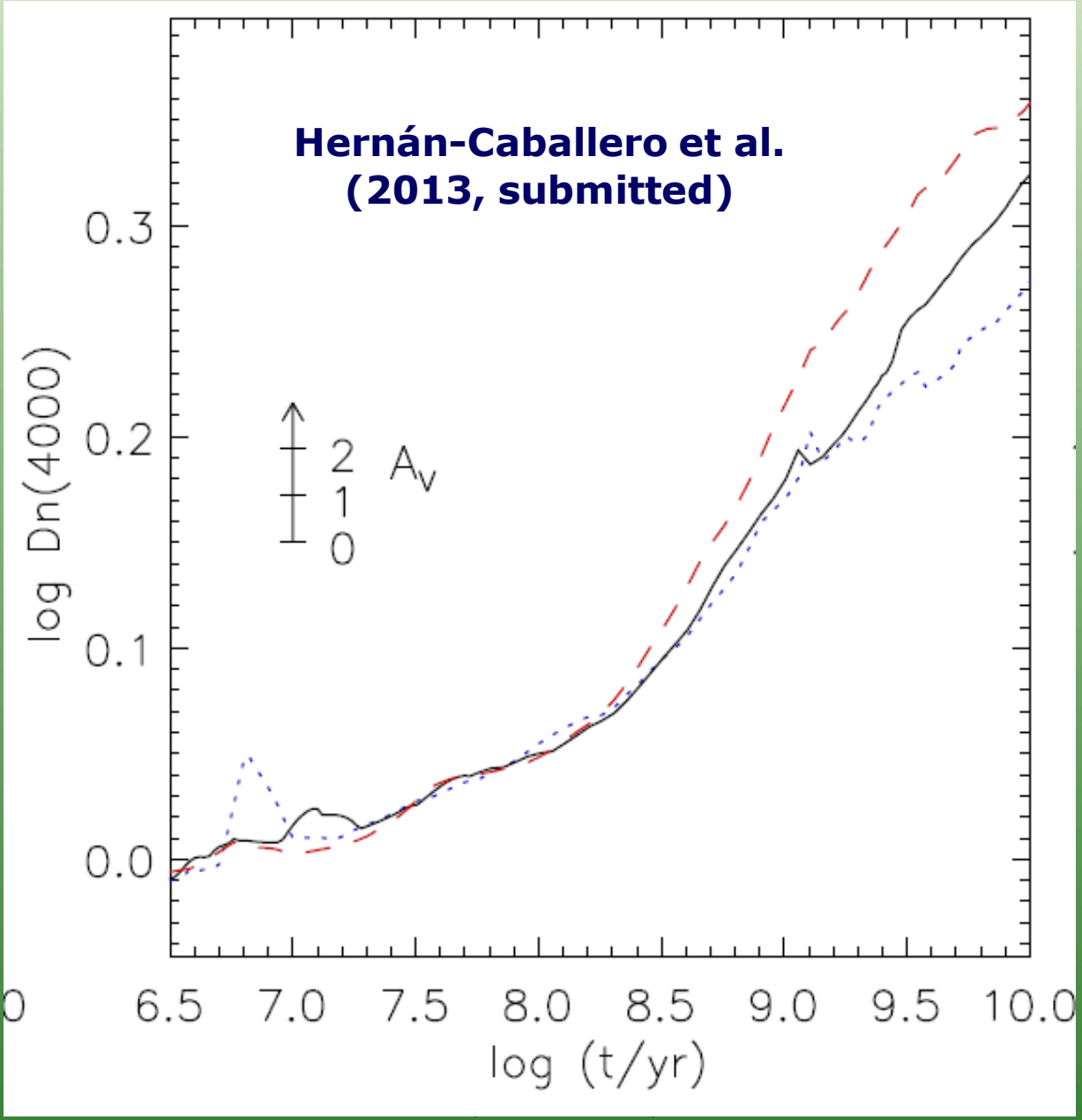
Daddi et al. (2005)

The Mg(UV) spectral index as an age indicator

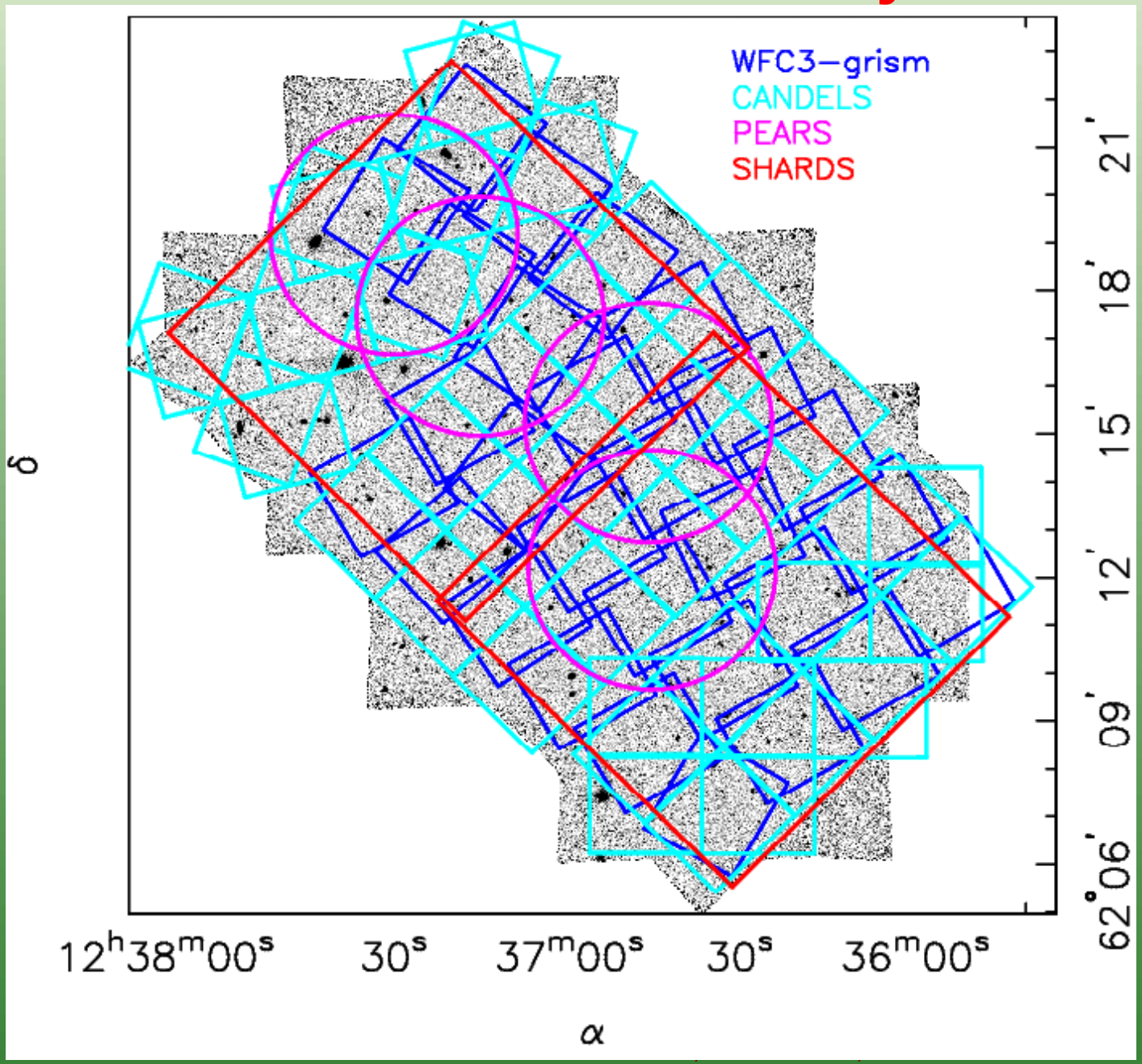


Daddi et al. (2005)

The Mg(UV) spectral index as an age indicator

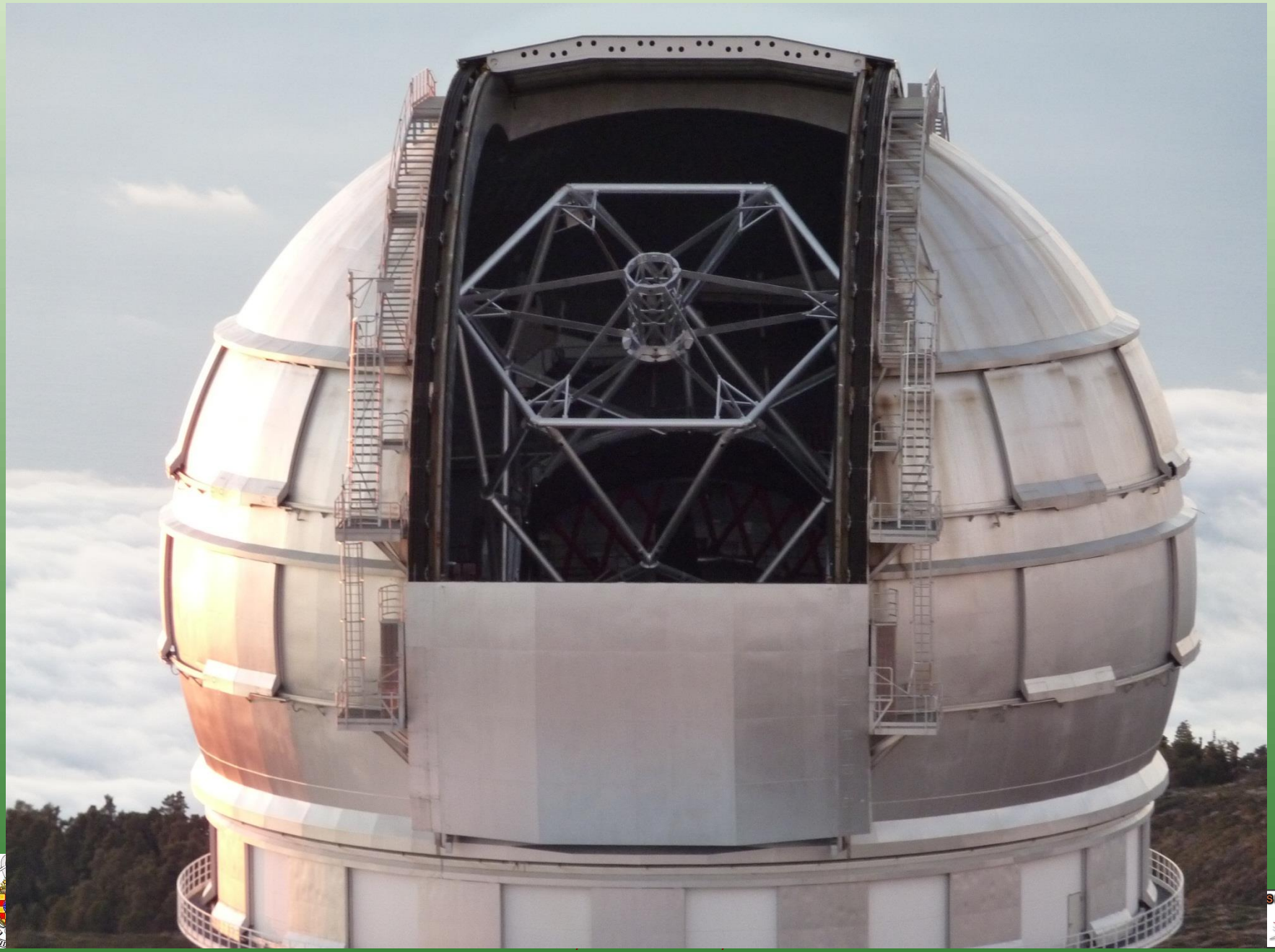


SHARDS: surveyed area

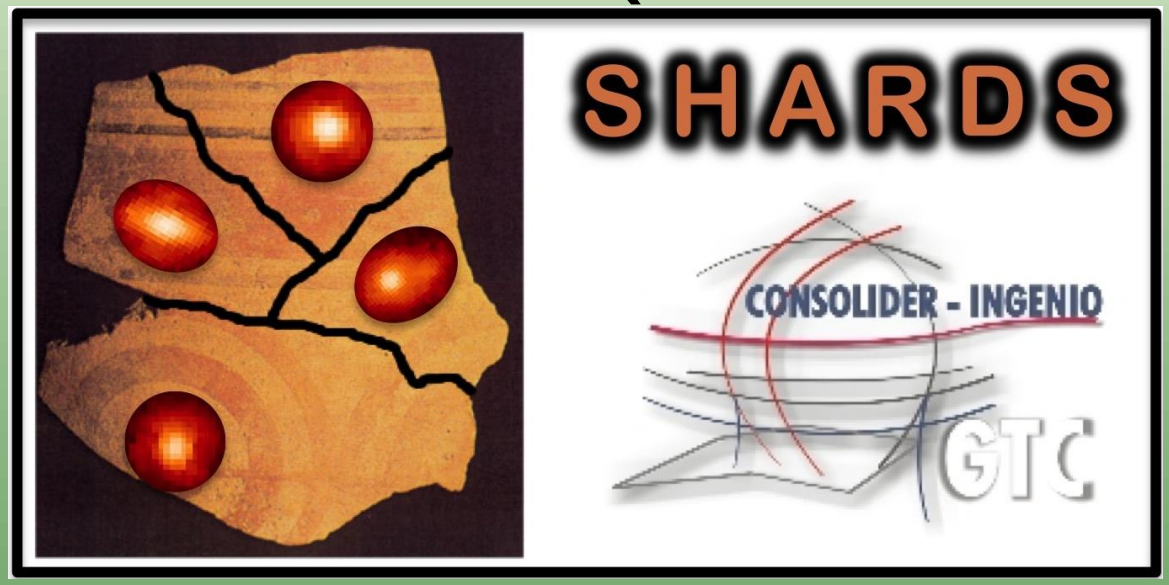


- 2 pointings in GOODS-N.
- 25 filters (R~50).
- 20 nights of <0.9” seeing at GTC.

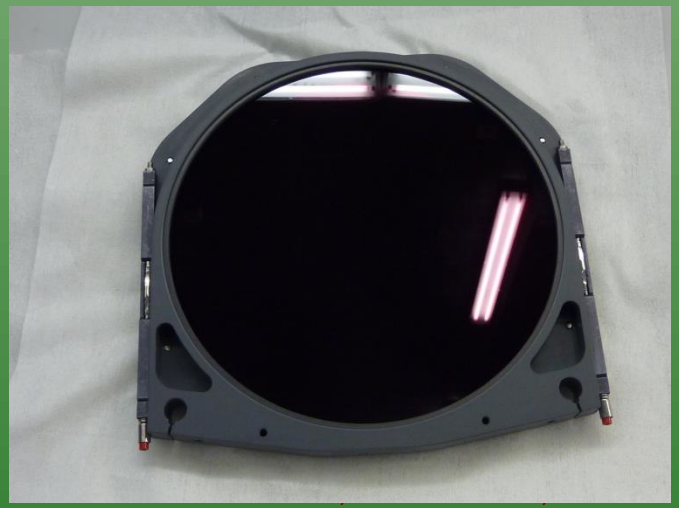
How can we study in detail z>0 galaxies?



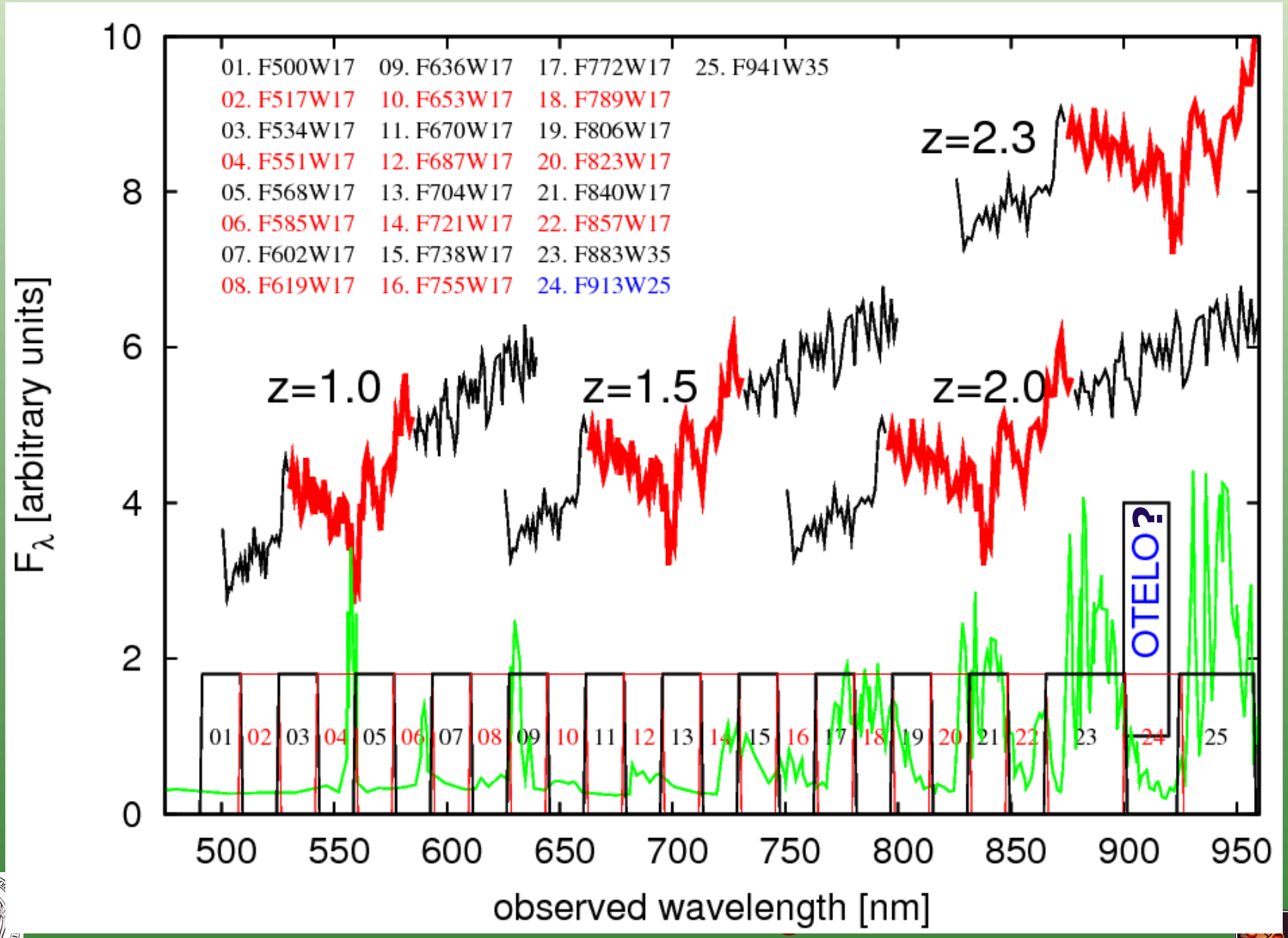
SHARDS: Survey for High-z Absorption Red and Dead Sources (in GOODS-N field)



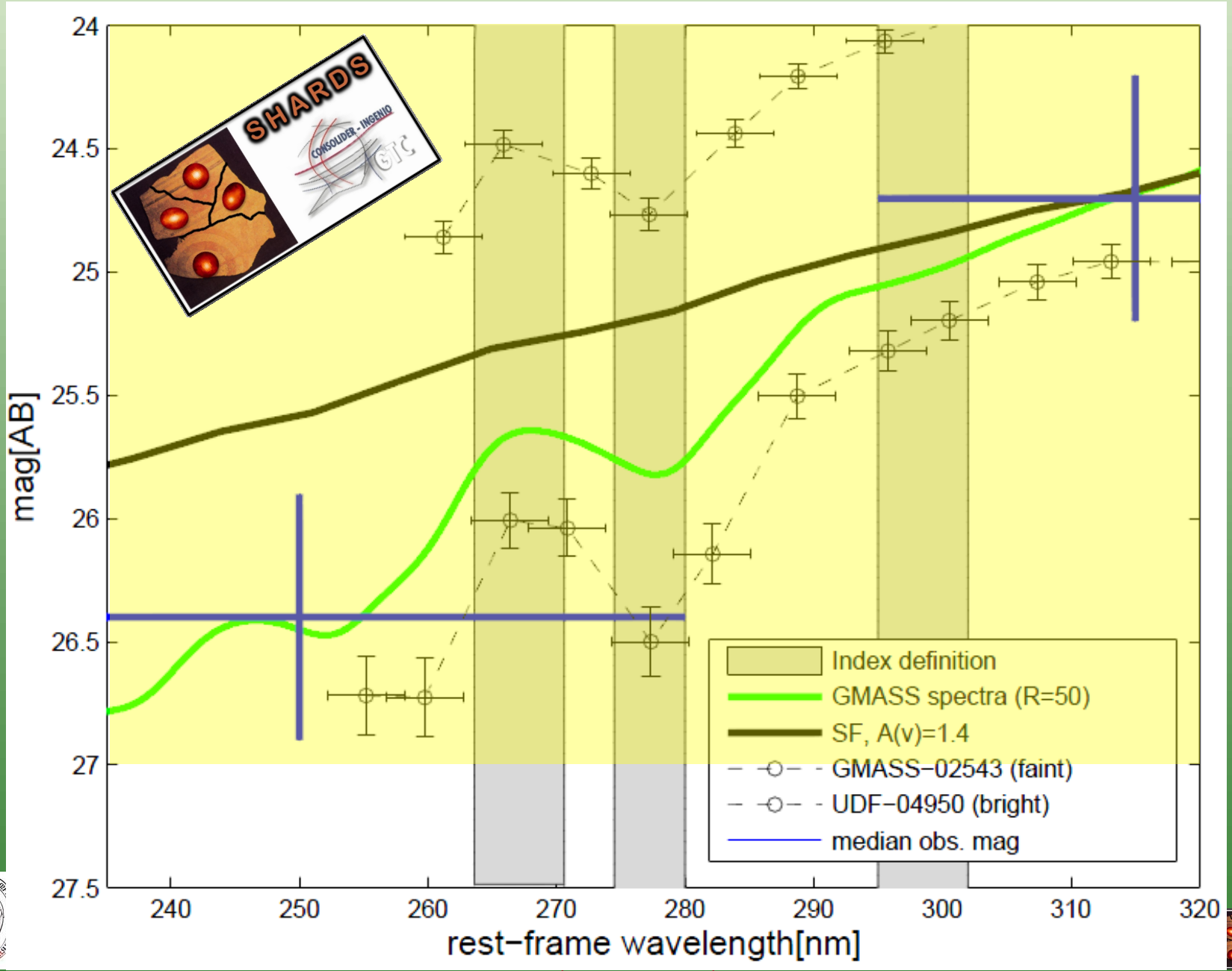
http://guaix.fis.ucm.es/~pgperez/SHARDS



SHARDS: spectro-photometry in GOODS-N



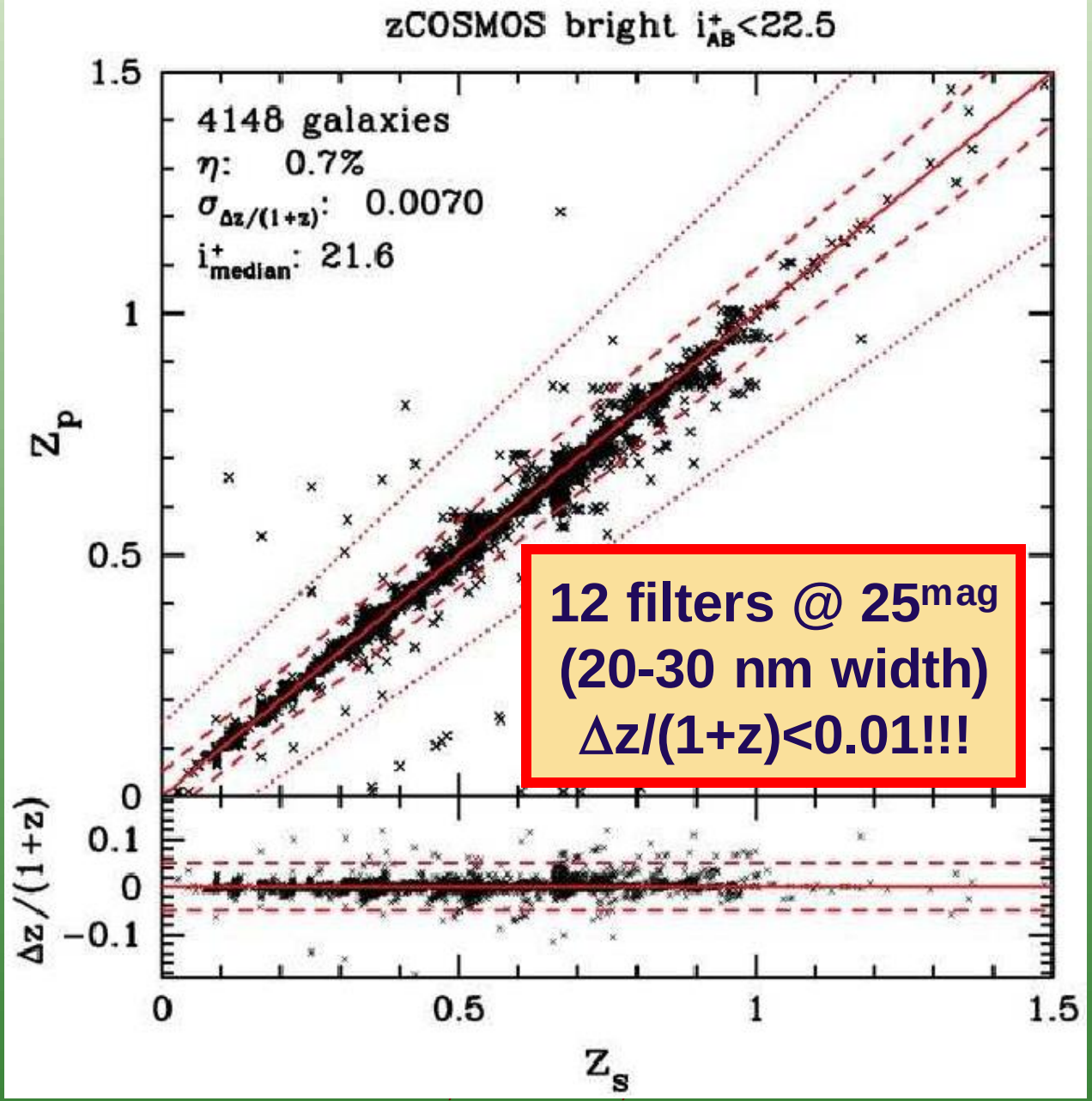
SHARDS: Mg(UV) index with photometry



SHARDS: comparison w/ other surveys

Survey	Telescope	Area (arcmin^2)	Depth (AB)	# of MB filters	R=$\lambda/\delta\lambda$	seeing
COMBO17	MPG/ESO 2.2m	3600	23-24	12	15-30	1.0"-1.5"
COSMOS	Subaru 8m	7200	23-24	12	20-30	1.0"-1.5"
ALHAMBRA	CAHA 3.5m	14400	24-25	20	30	1.0"-1.5"
MUSYC	Subaru 8m	900	24-26	18	20-30	0.6"-1.8"
J-PAS (TBD)	OAJ 2.5m	9000	23	42	80	TBD
SHARDS	GTC 10.4m	130	27	25	50	<1"

SHARDS science: better photo-z's



12 filters @ 25^{mag} (20-30 nm width) $\Delta z/(1+z)<0.01$!!!

Ilbert et al. (2009)

SHARDS: a bit of history

- SHARDS-like survey was discussed & submitted in September 2008 to get data with 13 order-sorter filters (Barro, Gallego, Zamorano, P-G). Strategy was already going beyond a COMBO17 survey and measuring absorption bands. Successful, but "technical problems" took us down (jointly with 2 other proposals using MOS).
- Submitted in March 2009 as an ESO/GTC LP.
- We got the time and had to find funds (Consolider, PNAyA Gallego, AC P-G) to buy filters and manufacture filter holders at UCM during 2010.
- Some data were taken in 2010 (<10% of total).
- Most data were taken in 2011 (70%). Antonio Cava was hired and we developed the SHARDS pipeline.
- Almost no data in 2012.
- Survey finished in June 2013.
- First paper submitted in mid-2012, published in 2013.

SHARDS: current status

Filters are available for general use!

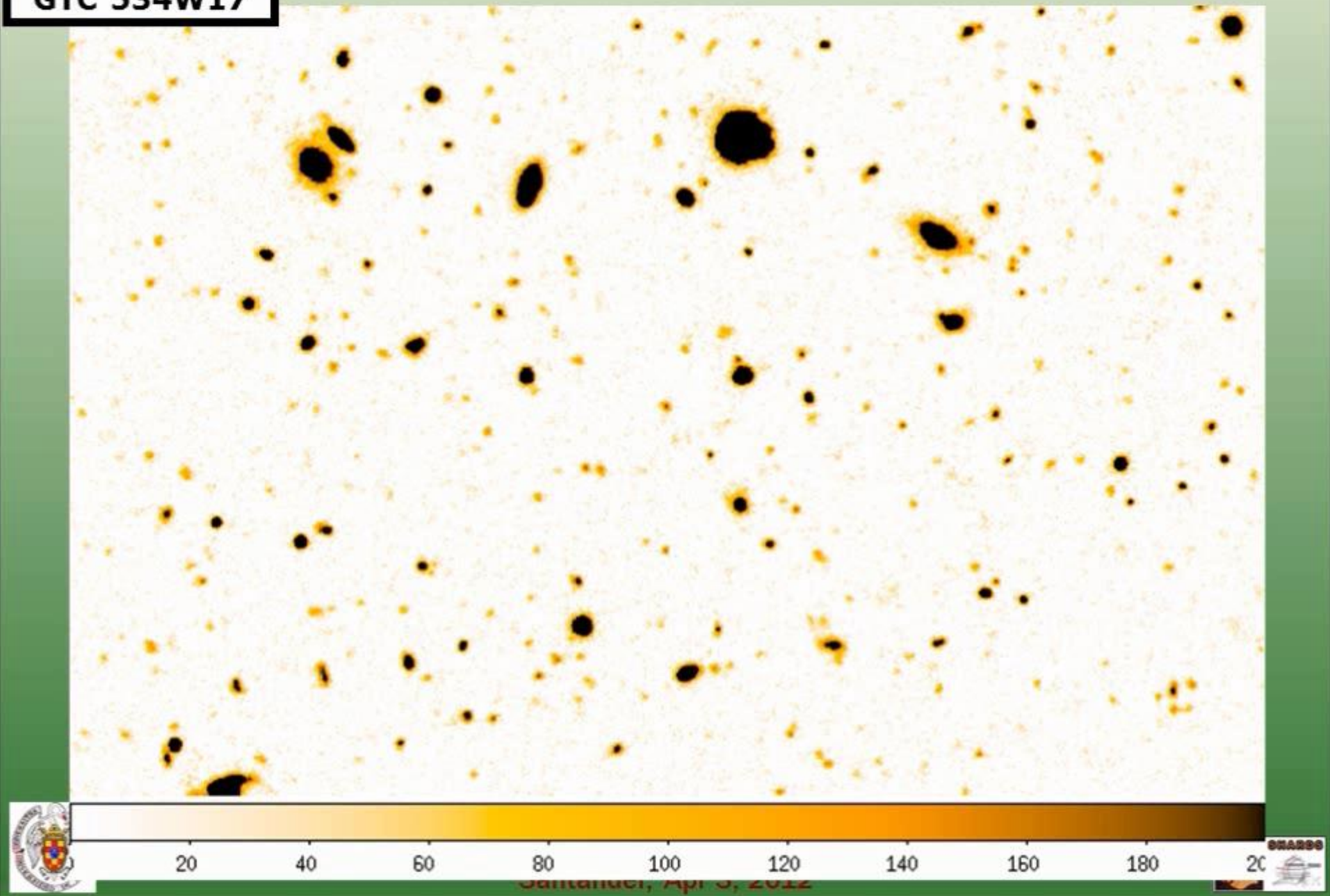
Filter #	[illegible]	Central [illegible] AOI=10.5° [illegible]	[illegible] (nm)	[illegible]	[illegible] mag)	[illegible]	Transmission file
01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N/A	AOI=0°
02	F517W17	520	16	4445	27.0	N/A	AOI=0°
03	F534W17	536	17	4800	27.0	N/A	AOI=0°
04	F551W17	552	14	5190	27.0	N/A	AOI=0°
05	F568W17	569	14	5810	27.0	N/A	AOI=0°
06	F585W17	586	15	6125	27.0	N/A	AOI=0°
07	F602W17	603	16	7440	27.0	N/A	AOI=0°
08	F619W17	619	16	7920	27.0	N/A	AOI=0°
09	F636W17	636	16	9180	27.0	N/A	AOI=0°
10	F653W17	653	16	10440	27.0	N/A	AOI=0°
11	F670W17	668	16	4550	26.5	N/A	AOI=0°
12	F687W17	688	17	9270	26.5	N/A	AOI=0°
13	F704W17	704	18	6120	26.5	N/A	AOI=0°
14	F721W17	720	19	6600	26.5	N/A	AOI=0°
15	F738W17	738	15	7965	26.5	N/A	AOI=0°
16	F755W17	754	15	9000	26.5	N/A	AOI=0°
17	F772W17	771	16	9900	26.5	N/A	AOI=0°
18	F789W17	789	16	12250	26.5	N/A	AOI=0°
19	F806W17	806	16	14300	26.5	N/A	AOI=0°
20	F823W17	825	15	18540	26.5	N/A	AOI=0°
21	F840W17	840	16	21120	26.5	N/A	AOI=0°
22	F857W17	856	16	24240	26.5	N/A	AOI=0°
23	F883W35	880	34	16480	26.5	N/A	AOI=0°
24	F913W25	910	28	0 (OTELO)	26.5	N/A	AOI=0°
25	F941W33	941	34	32000	26.5	N/A	AOI=0°

http://guaix.fis.ucm.es/~pgperez/SHARDS

SHARDS: current status

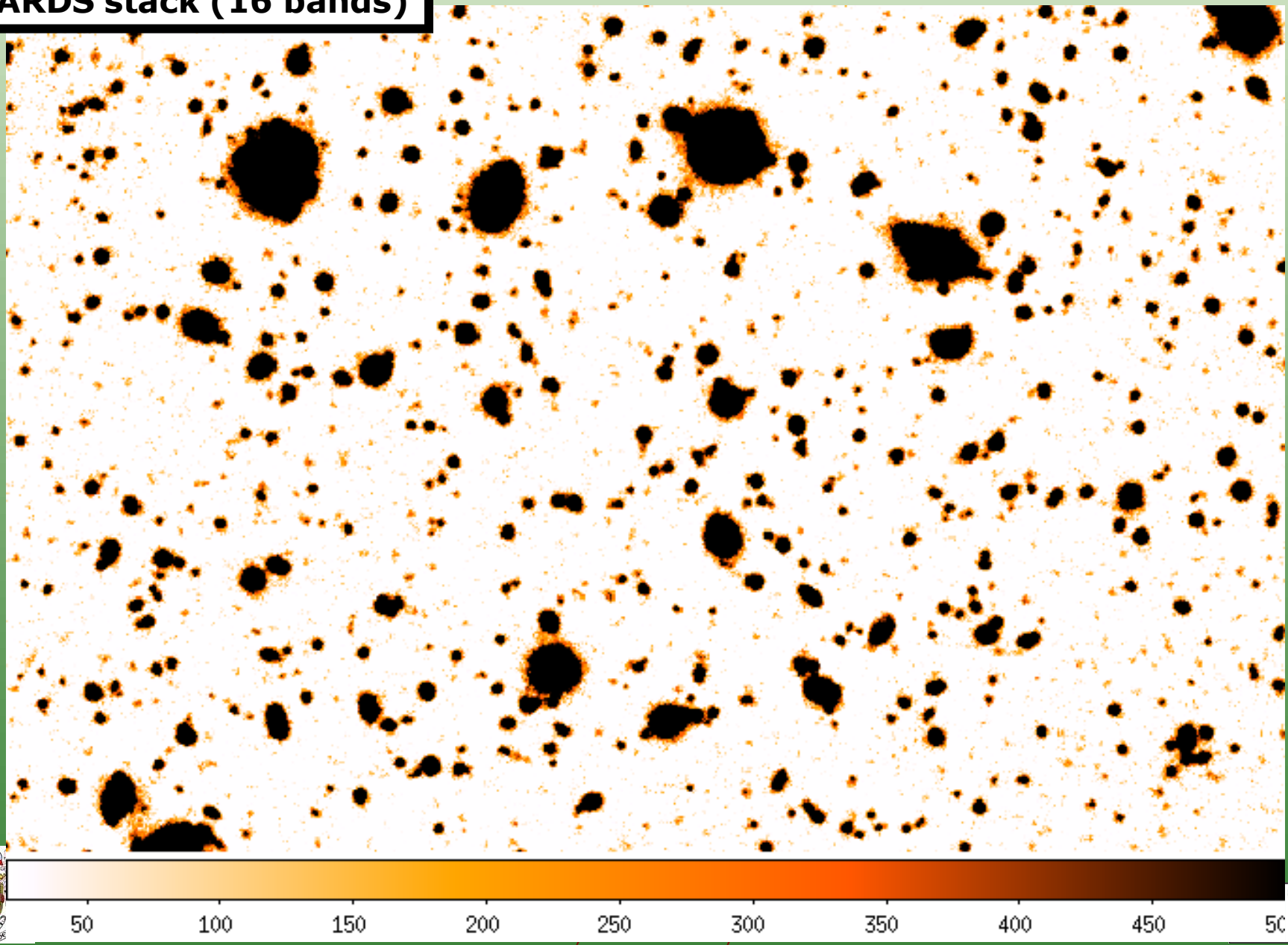
- Survey is now 100% complete!!!! (finished in June 10 '13)
- GTC Staff very helpful and enthusiastic with our program.
- Complete OSIRIS pipeline developed at UCM.
- Presentation paper out.
- One more paper submitted. Two in advanced state.
- Now we need more papers!!!

SHARDS data sneak peak

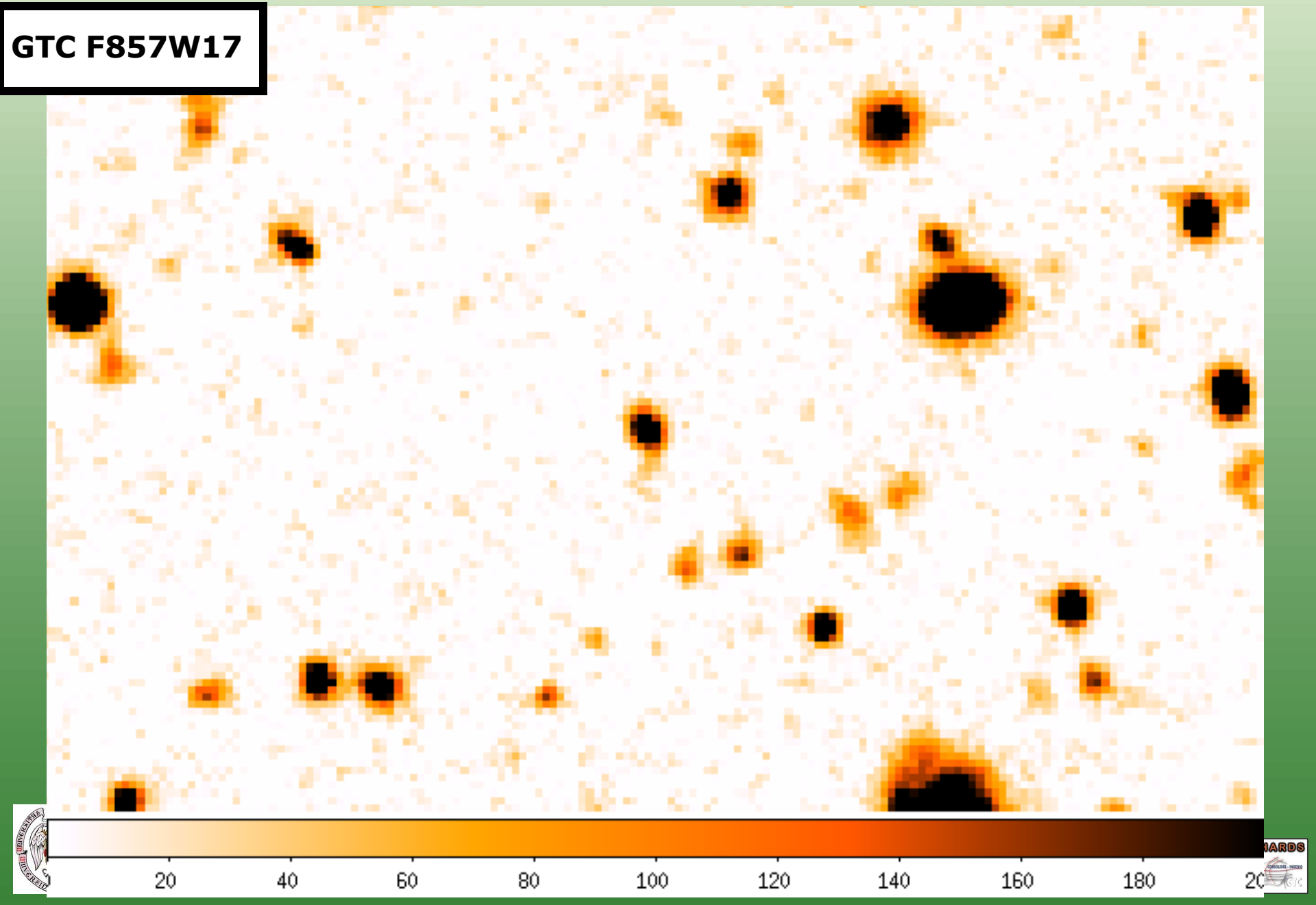


SHARDS data quality

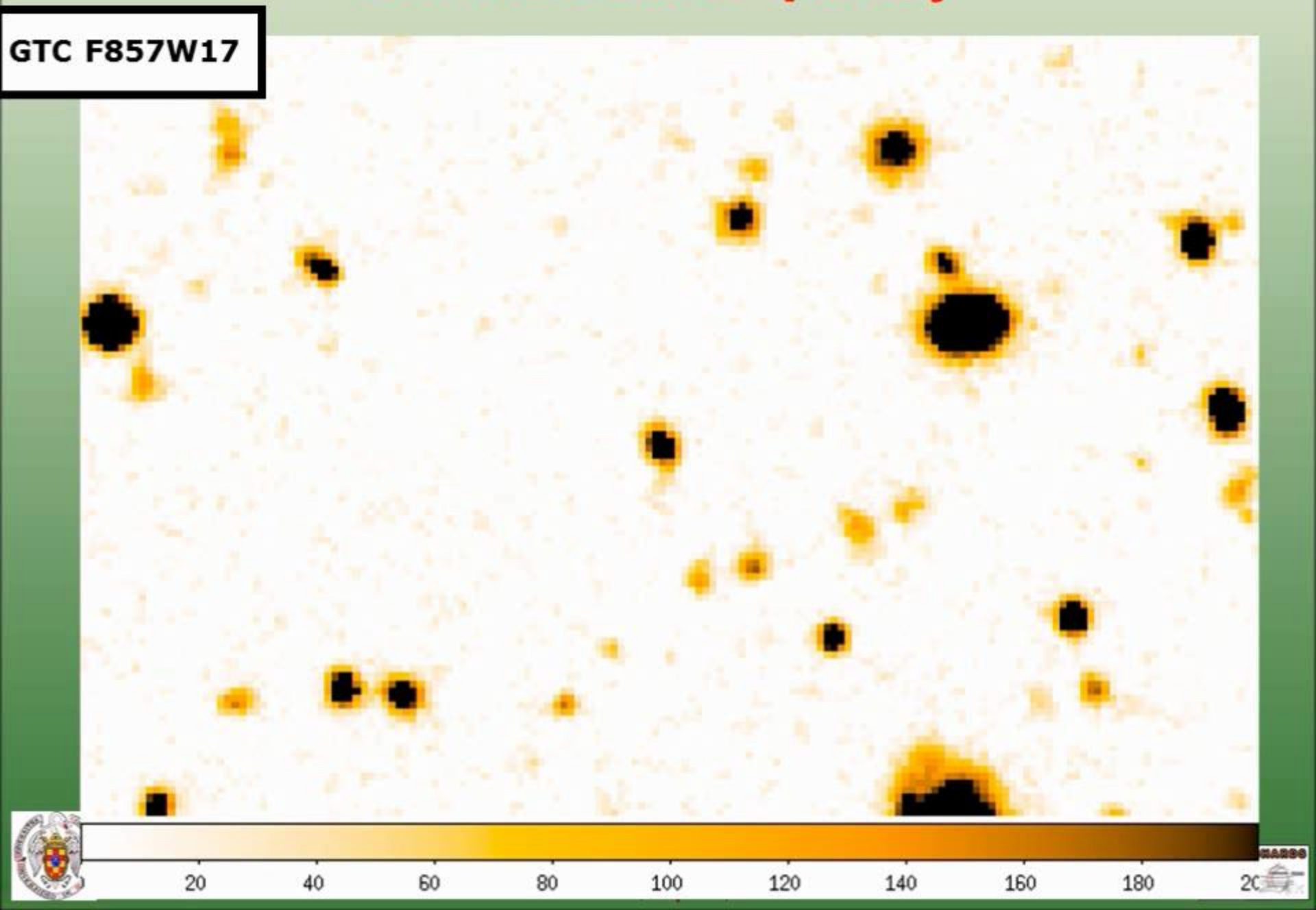
SHARDS stack (16 bands)



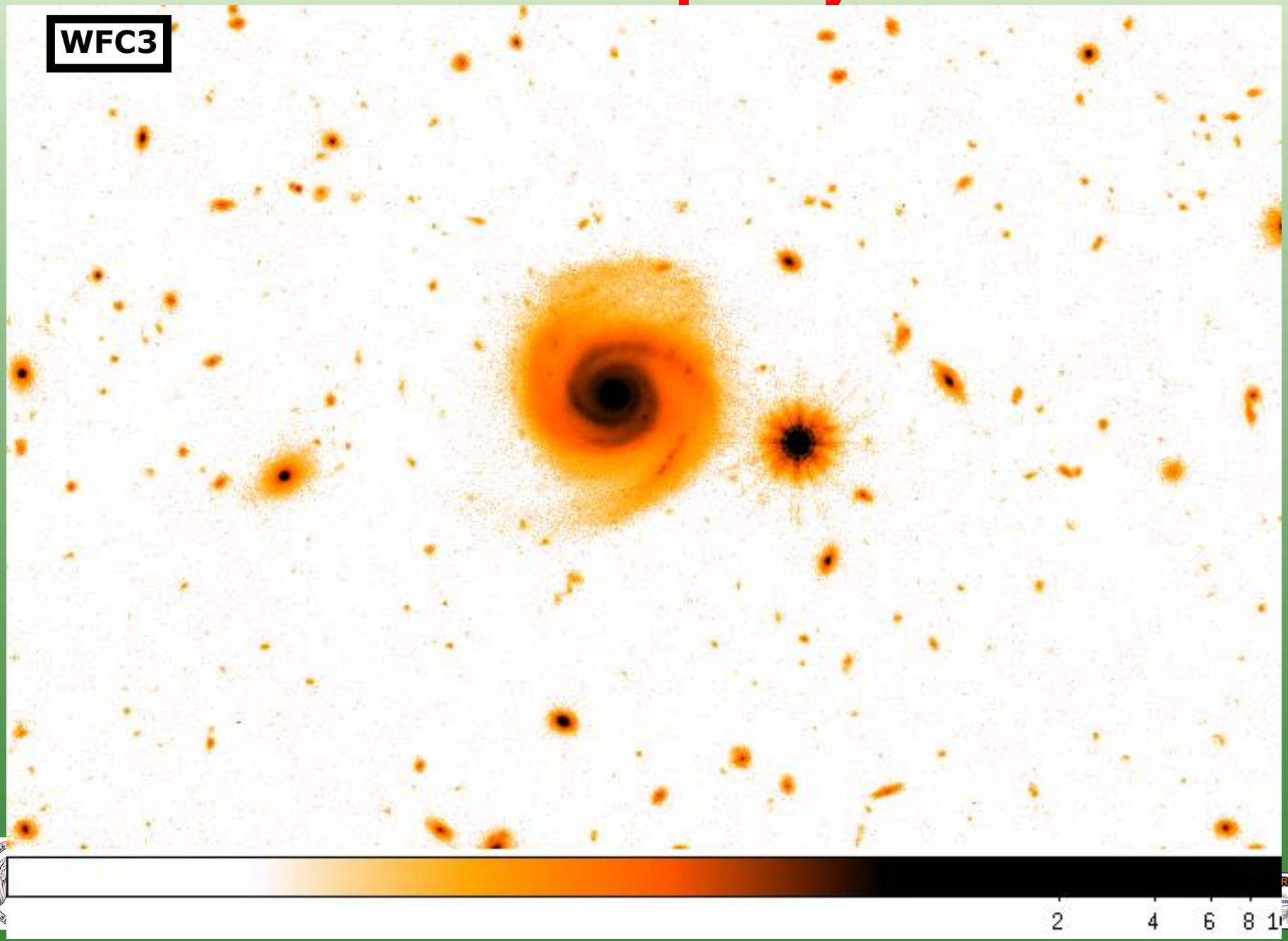
SHARDS data quality



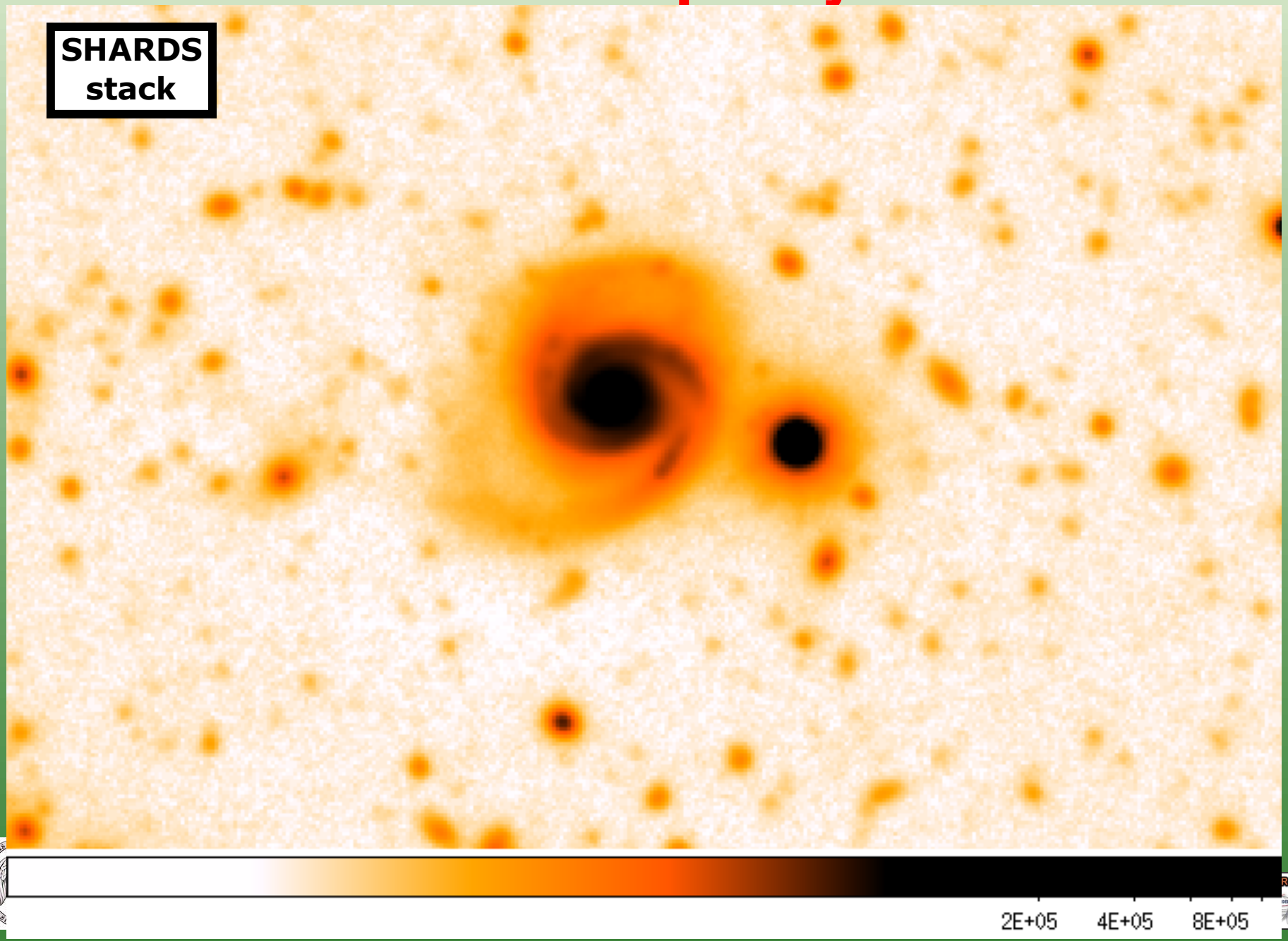
SHARDS data quality



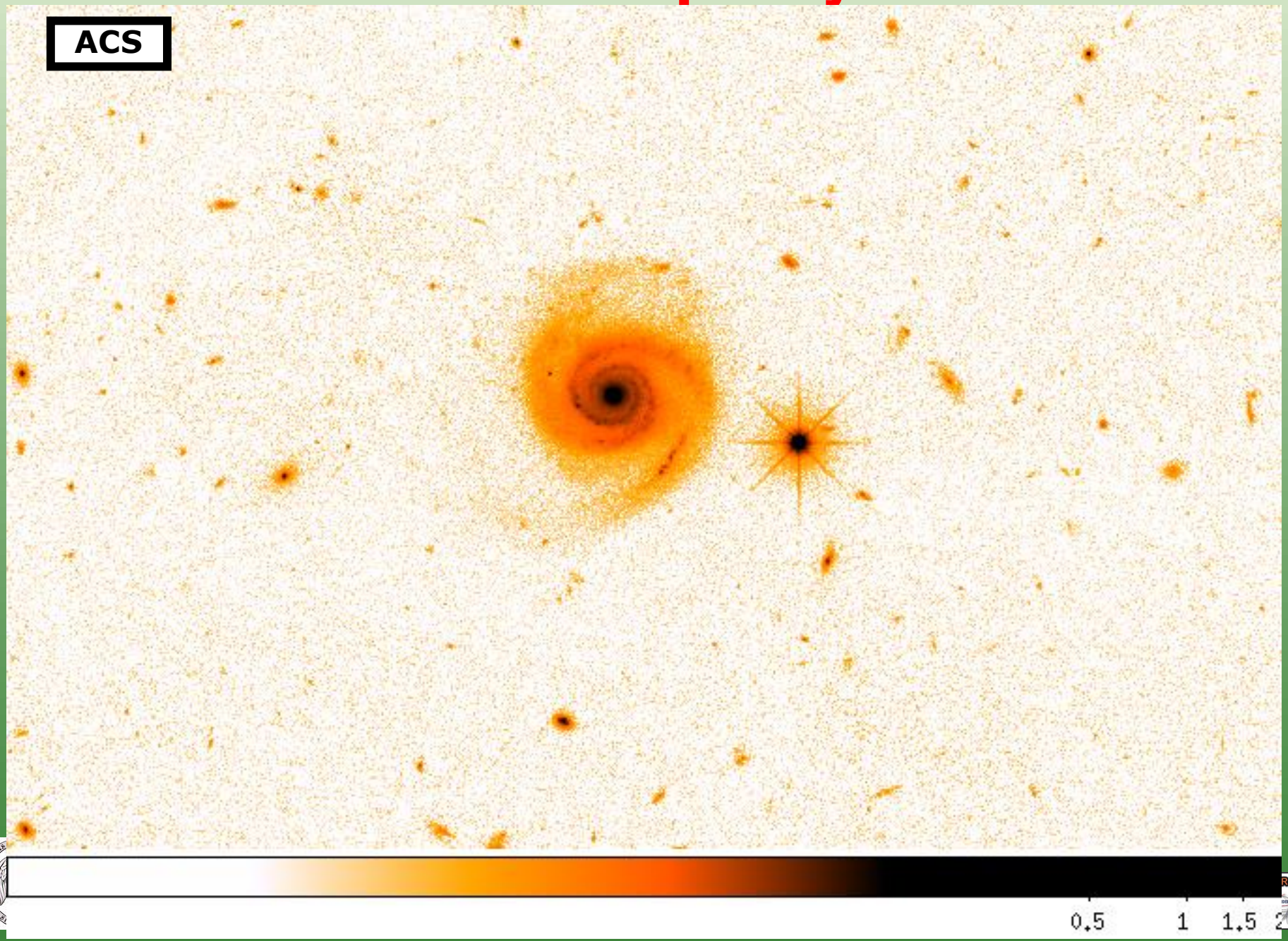
SHARDS data quality: halos



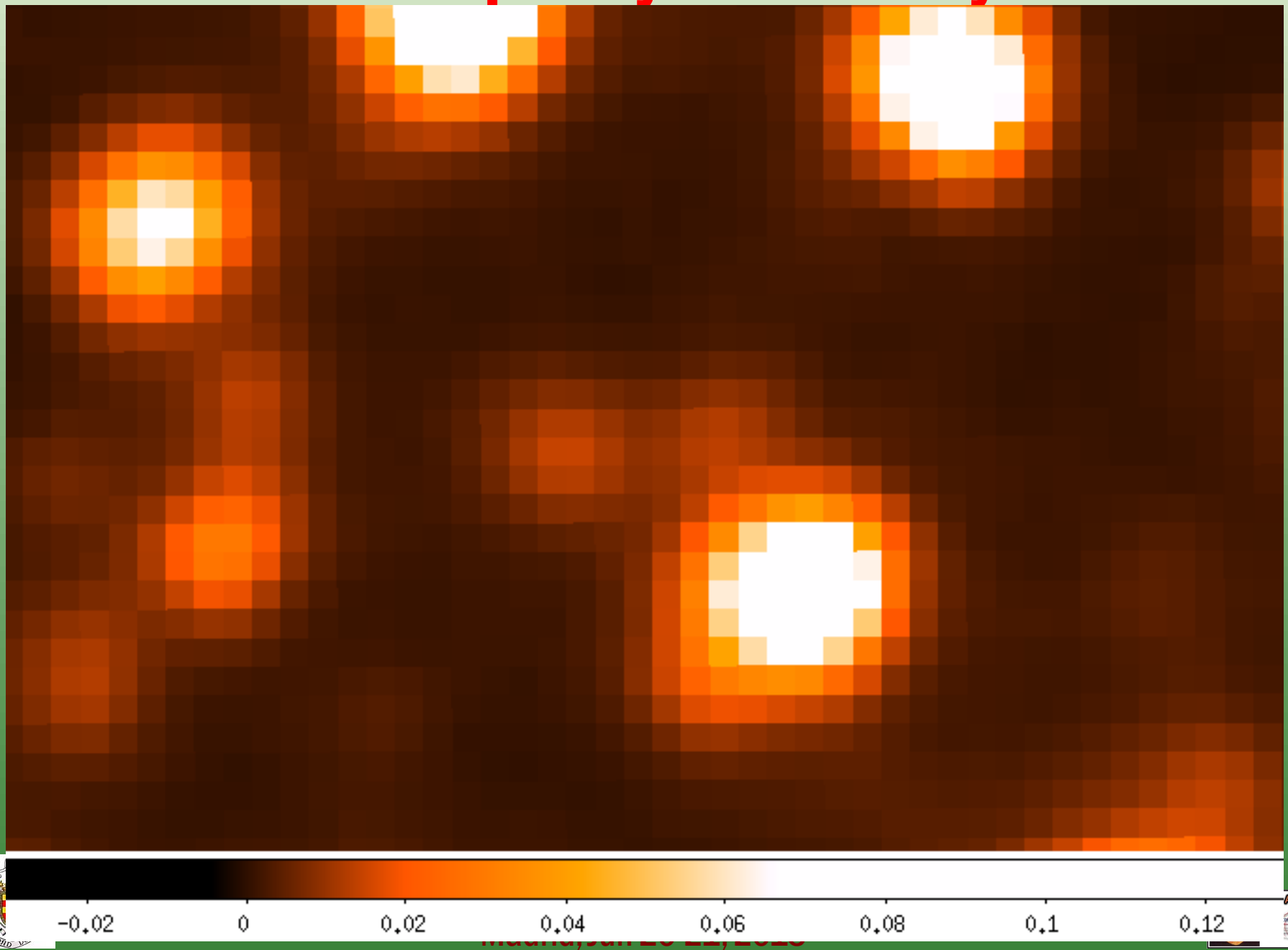
SHARDS data quality: halos



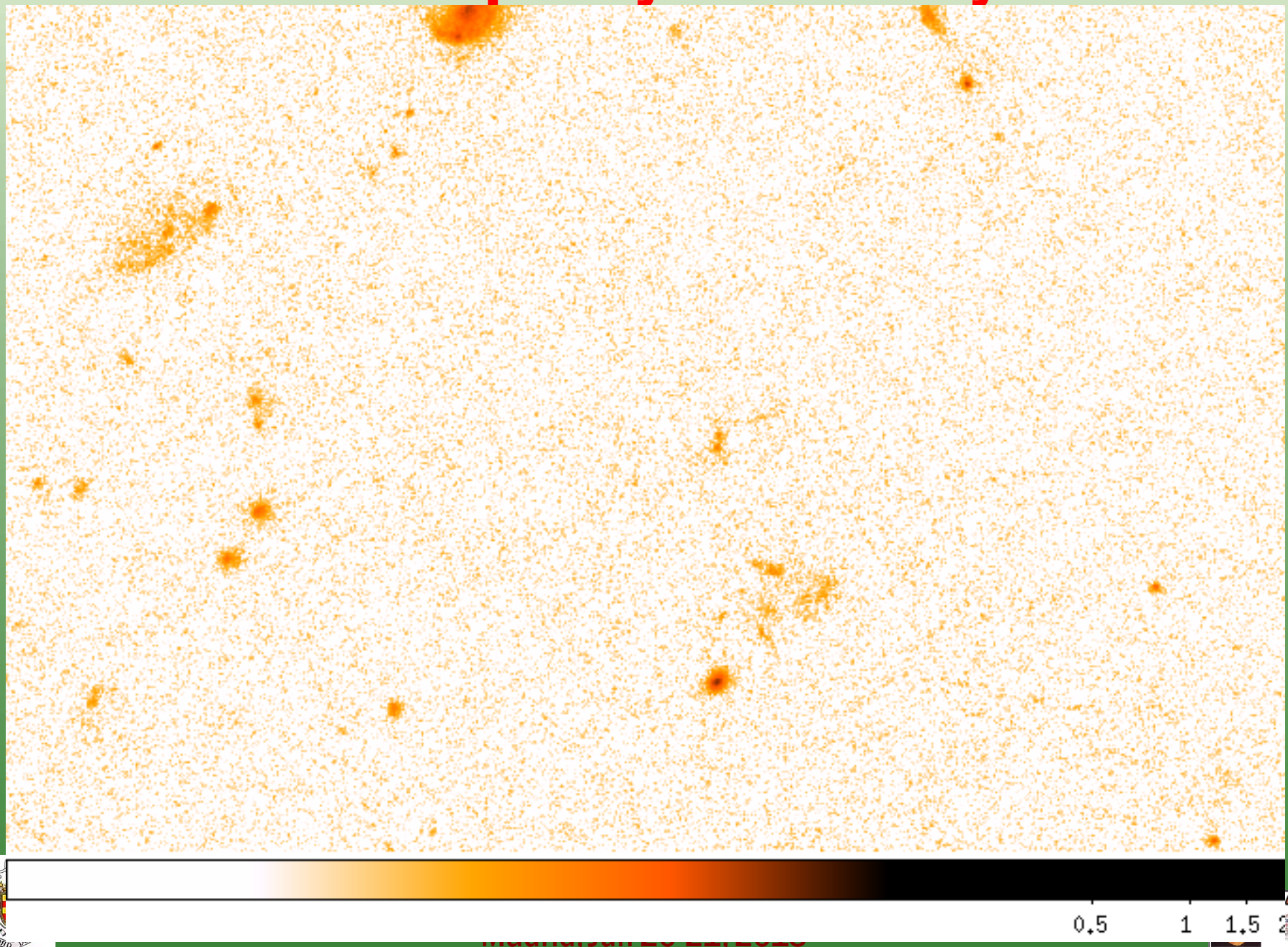
SHARDS data quality: halos



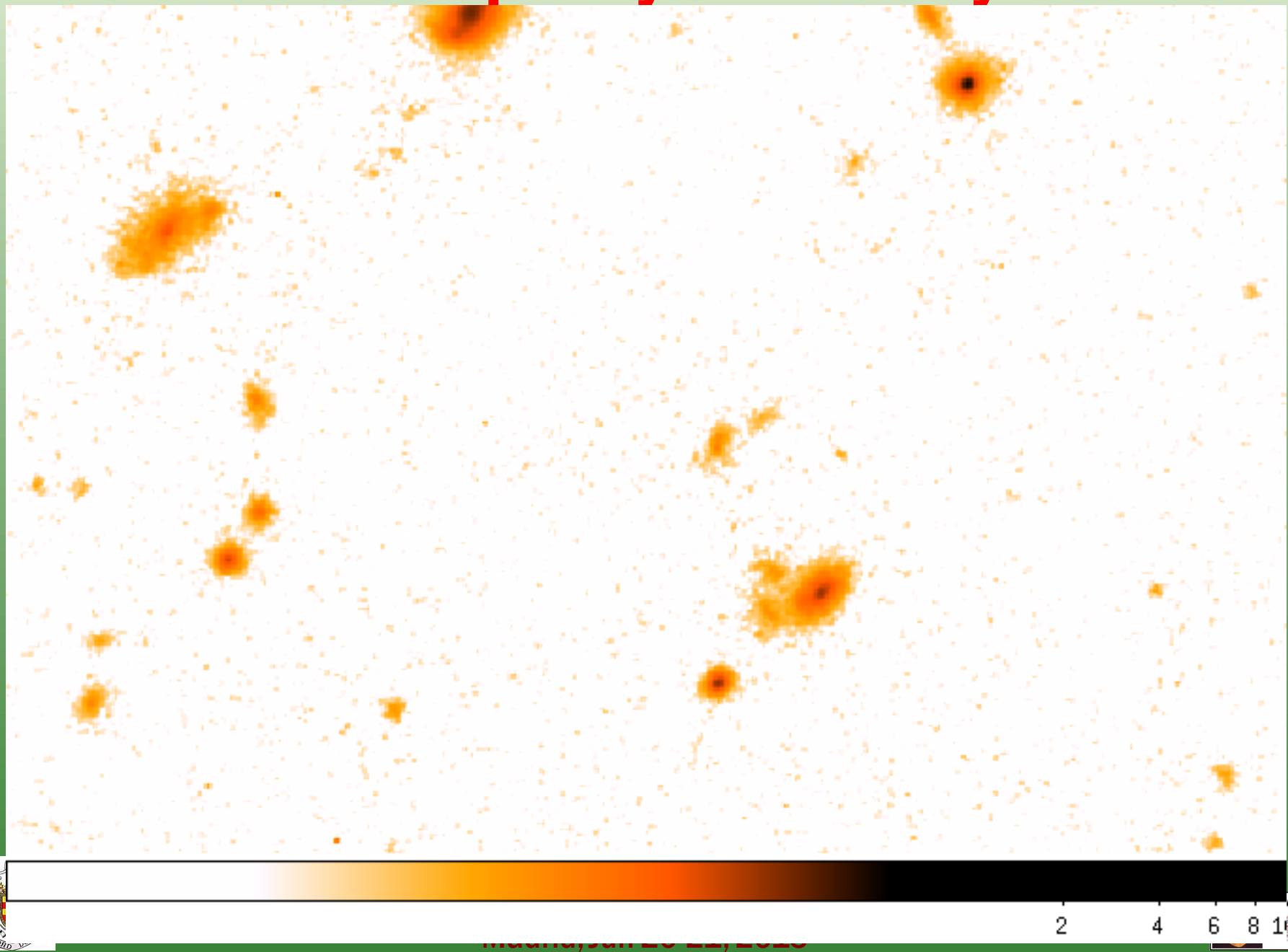
SHARDS data quality : IRAC-only sources



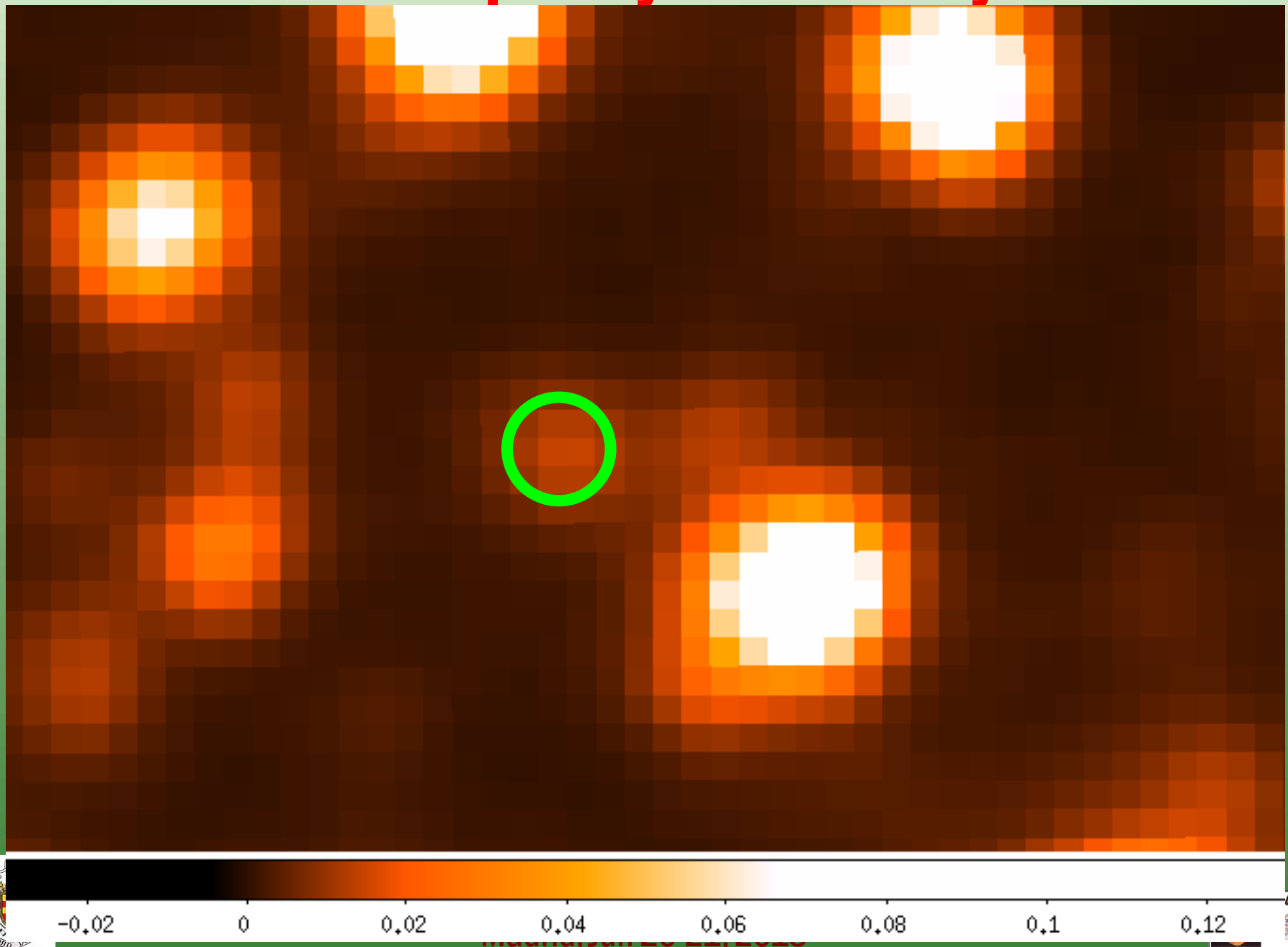
SHARDS data quality : IRAC-only sources



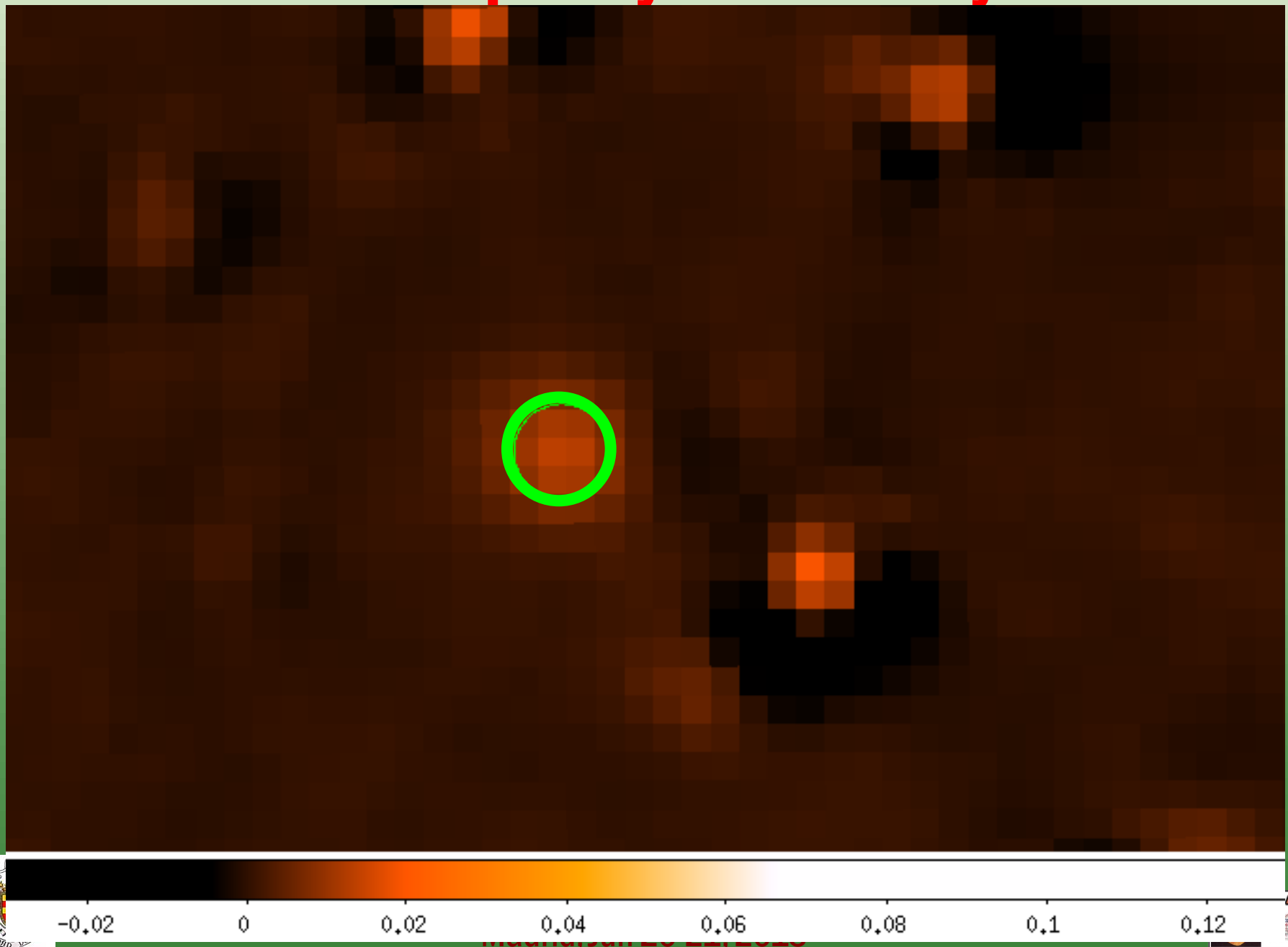
SHARDS data quality : IRAC-only sources



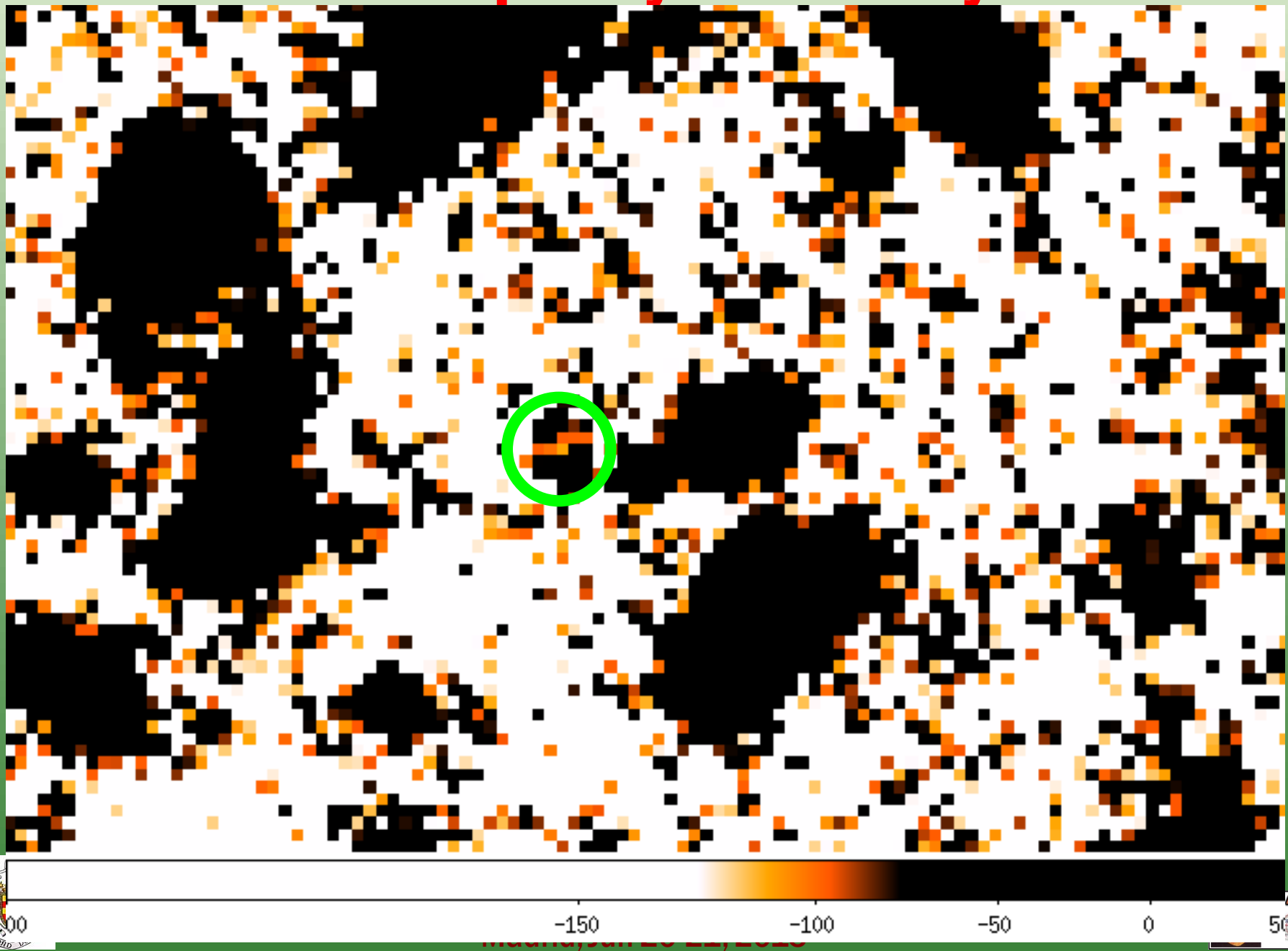
SHARDS data quality : IRAC-only sources



SHARDS data quality : IRAC-only sources

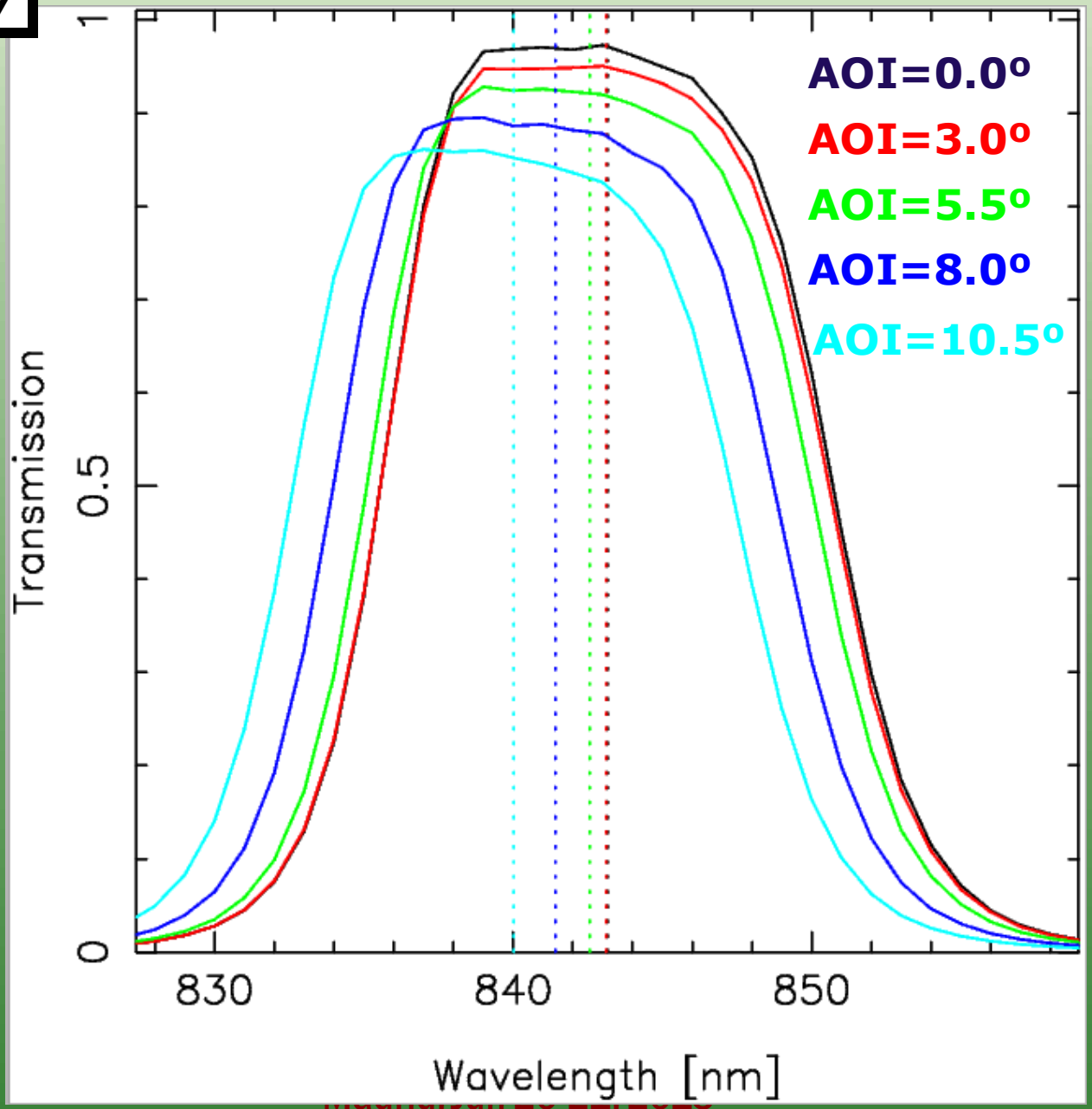


SHARDS data quality: IRAC-only sources



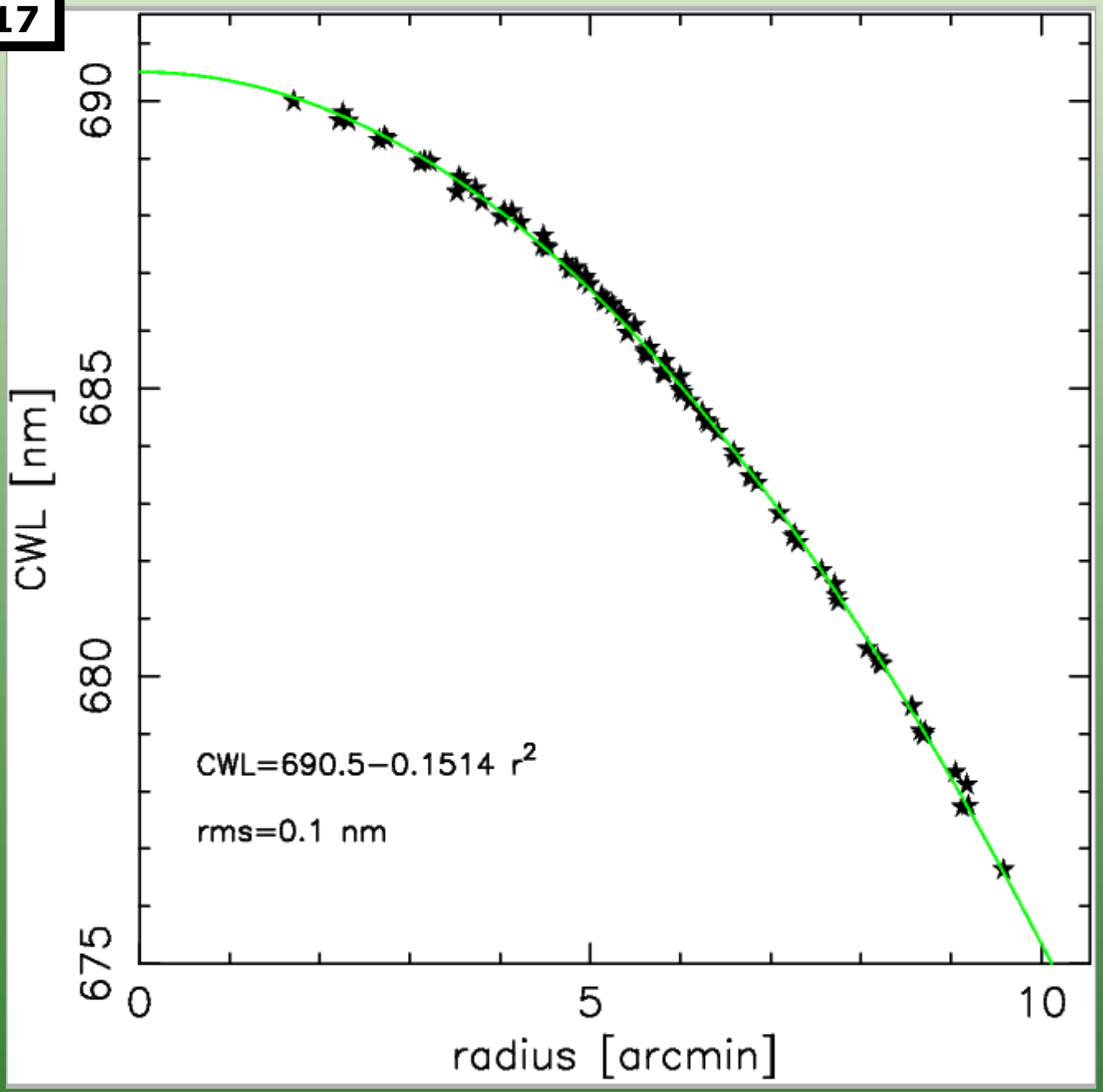
SHARDS (OSIRIS) peculiarities: calibration I

GTC F840W17

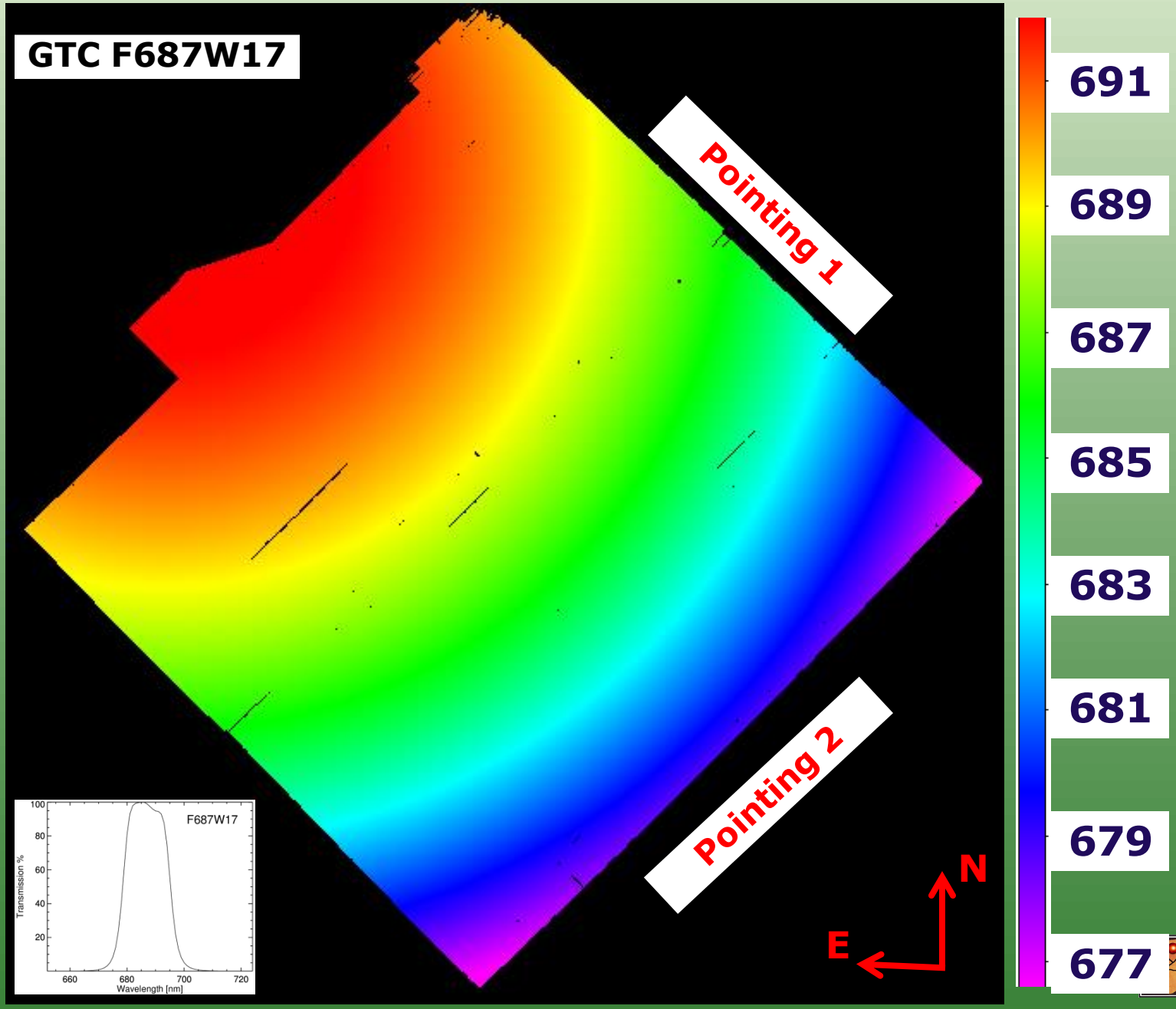


SHARDS (OSIRIS) peculiarities: calibration I

GTC F687W17

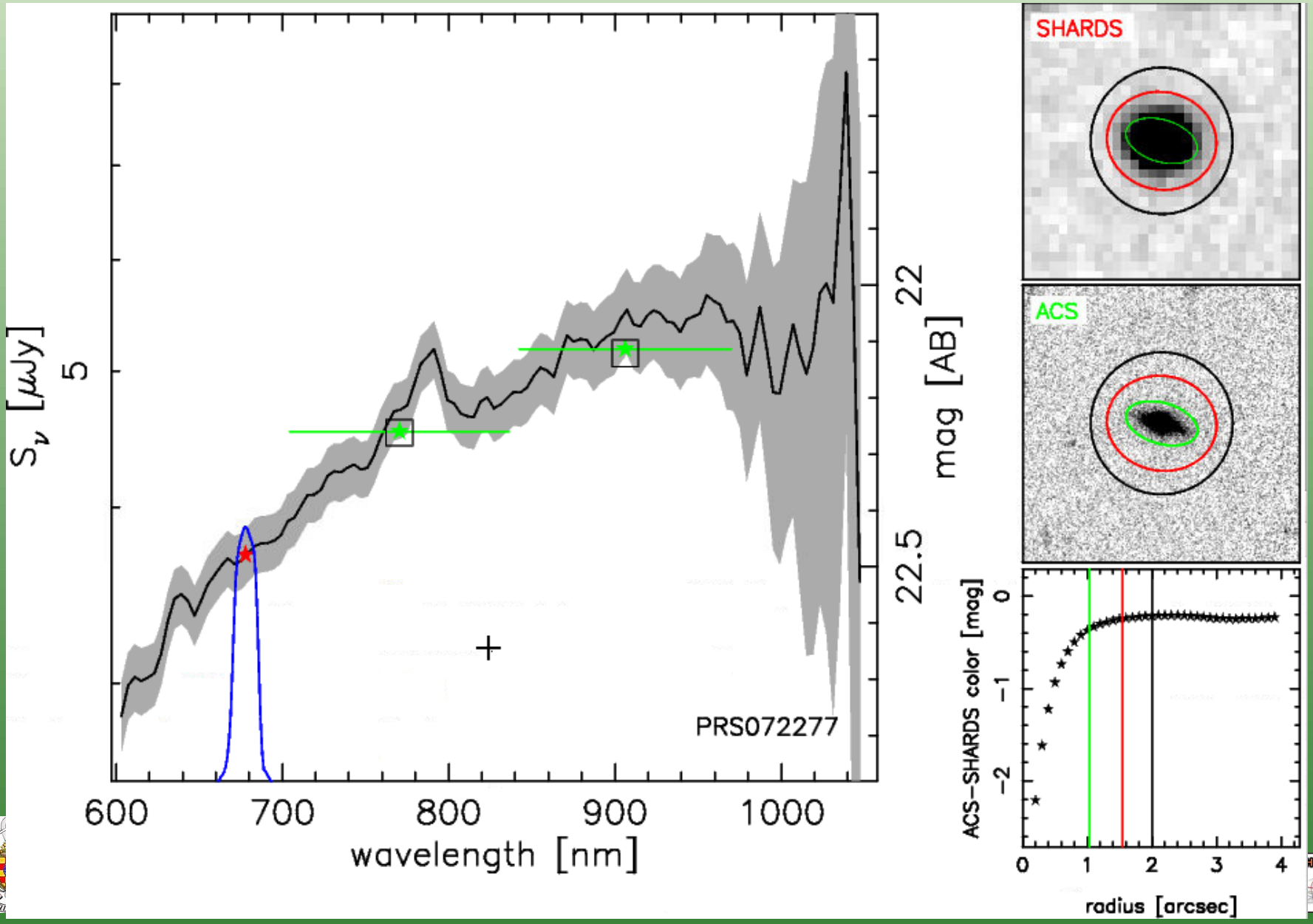


SHARDS (OSIRIS) peculiarities: calibration I



SHARDS calibration II

GTC F687W17



SHARDS calibration II

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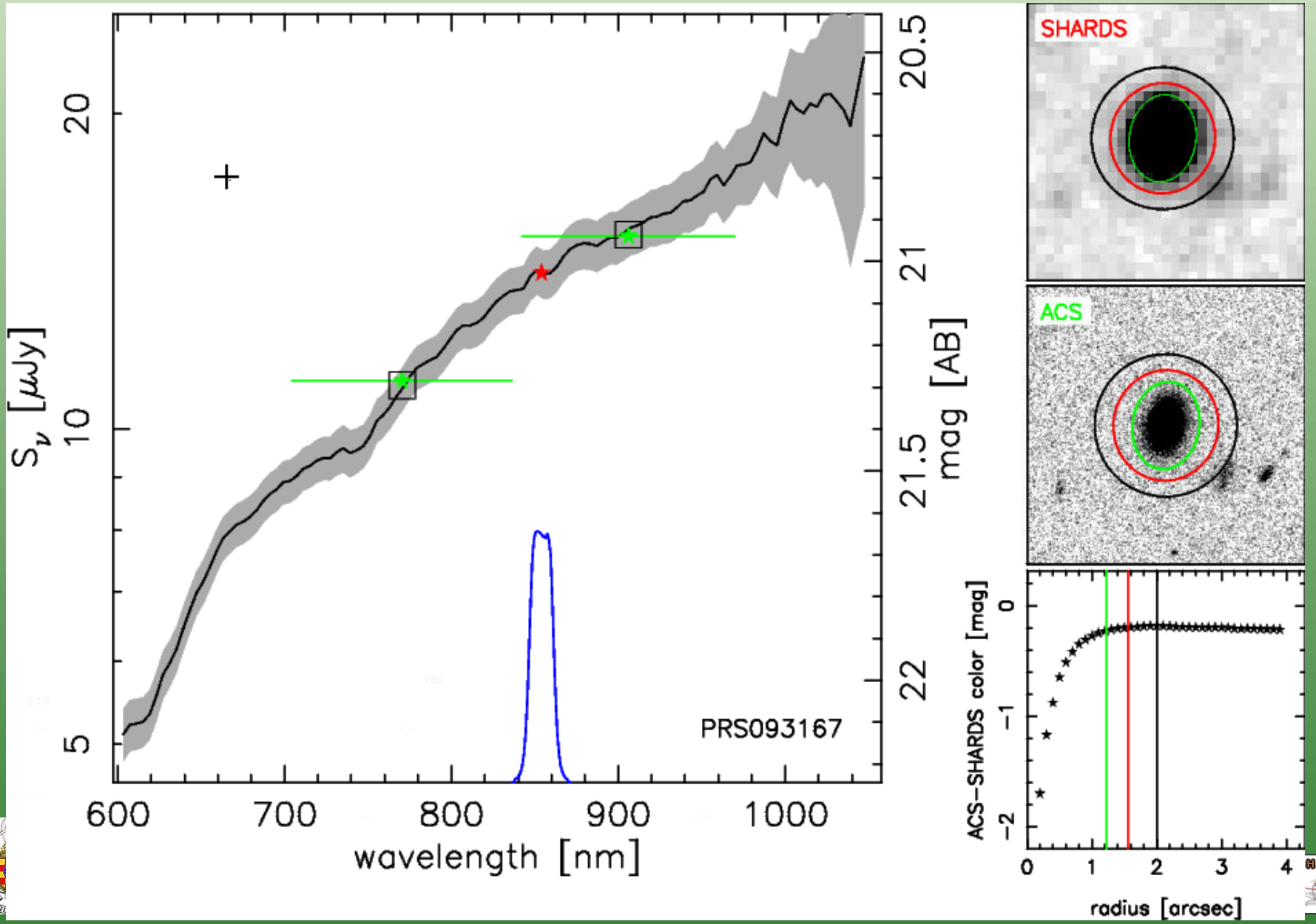
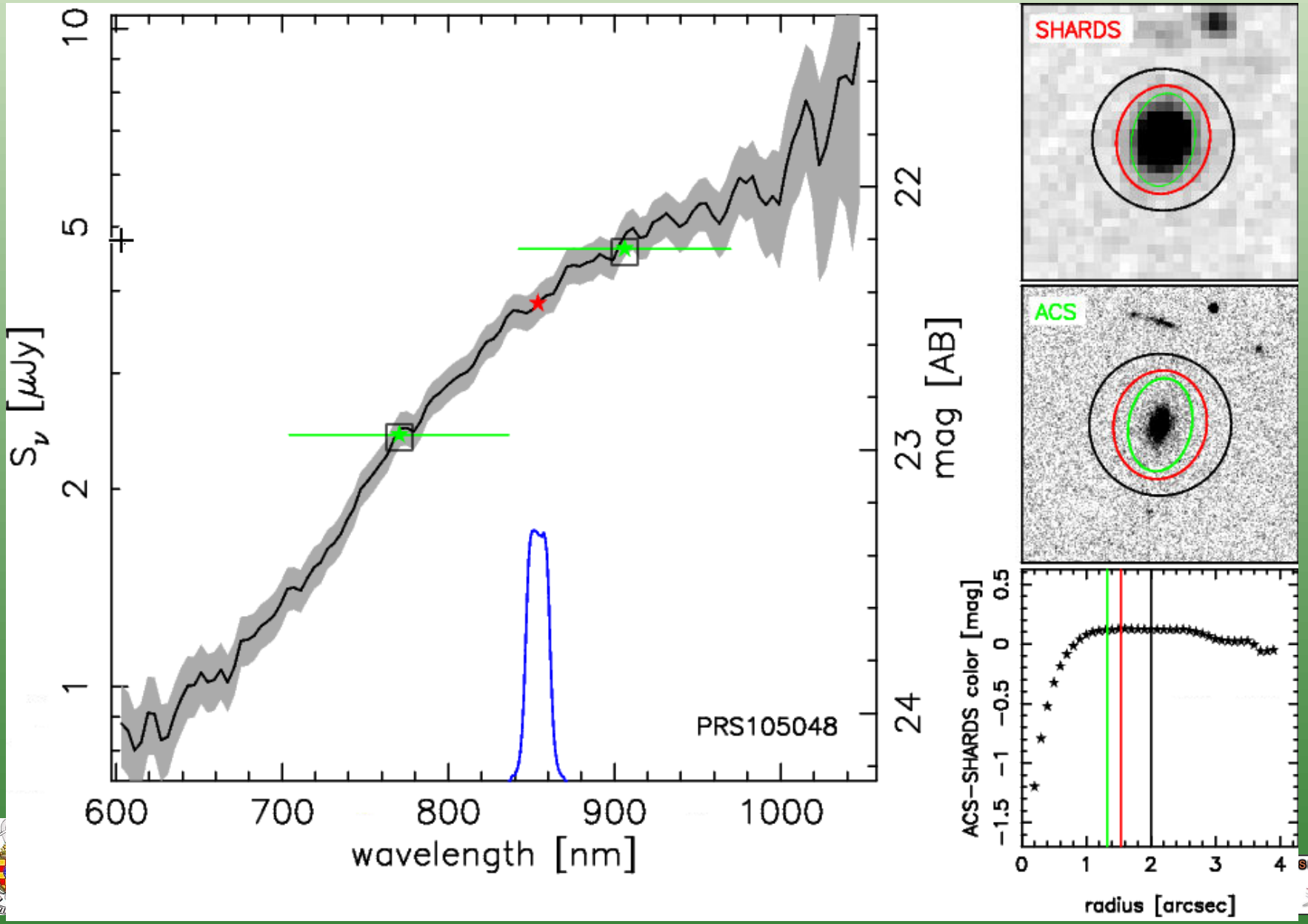


SHARDS calibration II

GTC F840W17



SHARDS Internal Data Release 1 (iDR1)

- **Reduced and calibrated images (v1.13.6) for 16 bands (619 to 883 nm), 2 pointings. Released in July 2012 (with first paper).**
- **Merged photometric catalogs (circular and "best" apertures). Combined selection at all bands, forced measurements.**
- **Filter characterization data.**

Home | Science | Team | Data | Publications | Private

Data repository: internal Data Release 1 (iDR1, July 2012)

Back to top

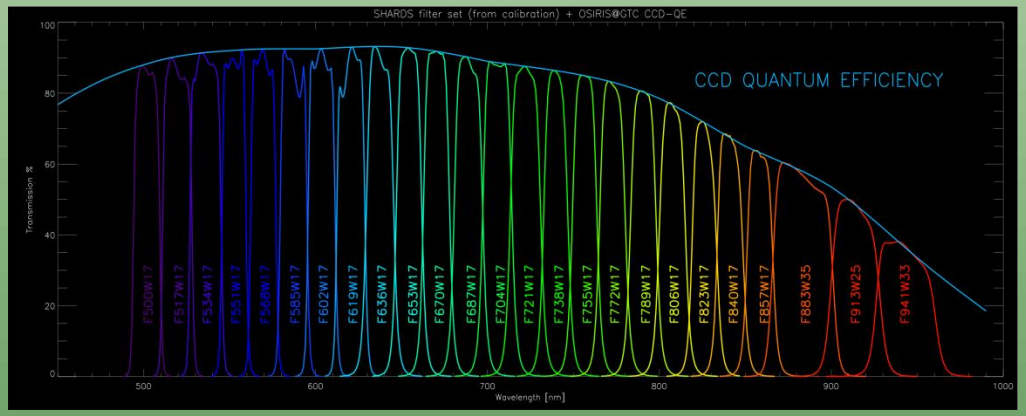
The science images, exposure maps and CWL (central wavelength) frames for the 2 SHARDS pointings covering the GOODS-N region can be found below. Links to merged photometric catalogs are also given.

Science images are aligned to the same WCS and have the same size, so they are comparable pixel by pixel. Reduction steps and calibration methods are described in Pérez-González et al. (2012). The typical absolute photometric uncertainty is 0.05 mag. The science images have been "flattened", so the whole image has the same zeropoint, as in regular images (but SHARDS images are not regular ones, see Pérez-González et al. 2012), although the photometric calibration depended on the position along the FOV due to the special characteristics of OSIRIS.

Catalogs have been built by merging the lists of sources detected in individual images, and then forcing measurements at all bands. A single file for each band is given, but all the bands count with the same number of objects and the different catalog files are comparable line by line. Each file gives the following fields: source ID, coordinates, XY positions, position angle of the best photometric aperture (the one used for mag_auto), aperture size in pixels, A_IMAGE parameter in pixels, Kron radius, ellipticity, FWHM, stellarity, photometric flag (all the previous parameters are given by sextractor and averaged through all detections), mag_auto (measured in consistent apertures in all images), uncertainty (taking into account correlated noise but not the absolute photometric uncertainty), background in counts, rms of the sky in counts, aperture magnitudes jointly with the errors and radii (in arcsec) of each aperture (11 different apertures have been considered), coverage at source position (number of frames), central wavelength and width of the filter seen by the galaxy, and image used for measurements. All magnitudes are AB.

Some spurious sources in the edges have been removed, but the catalog may still present false detections and ghosts around bright stars.

FITS images (sci, exp, CWL) TAR BALL WITH ALL IMAGES			Merged catalogs TAR BALL WITH ALL CATALOGS
F500W17	v1.13.6	Pointing 1 (NA, but observed) Pointing 2 (NA)	Pointing 1 (NA) Pointing 2 (NA)
F517W17	v1.13.6	Pointing 1 (NA) Pointing 2 (NA)	Pointing 1 (NA) Pointing 2 (NA)



SHARDS — Survey of High-z Absorption Red and Dead Sources

- CHARACTERIZATION OF THE SHARDS FILTER SET AND DATA QUALITY -

In this page you will find practical information about SHARDS observations: filters, trasmission curves, calibration plots, data quality, ...

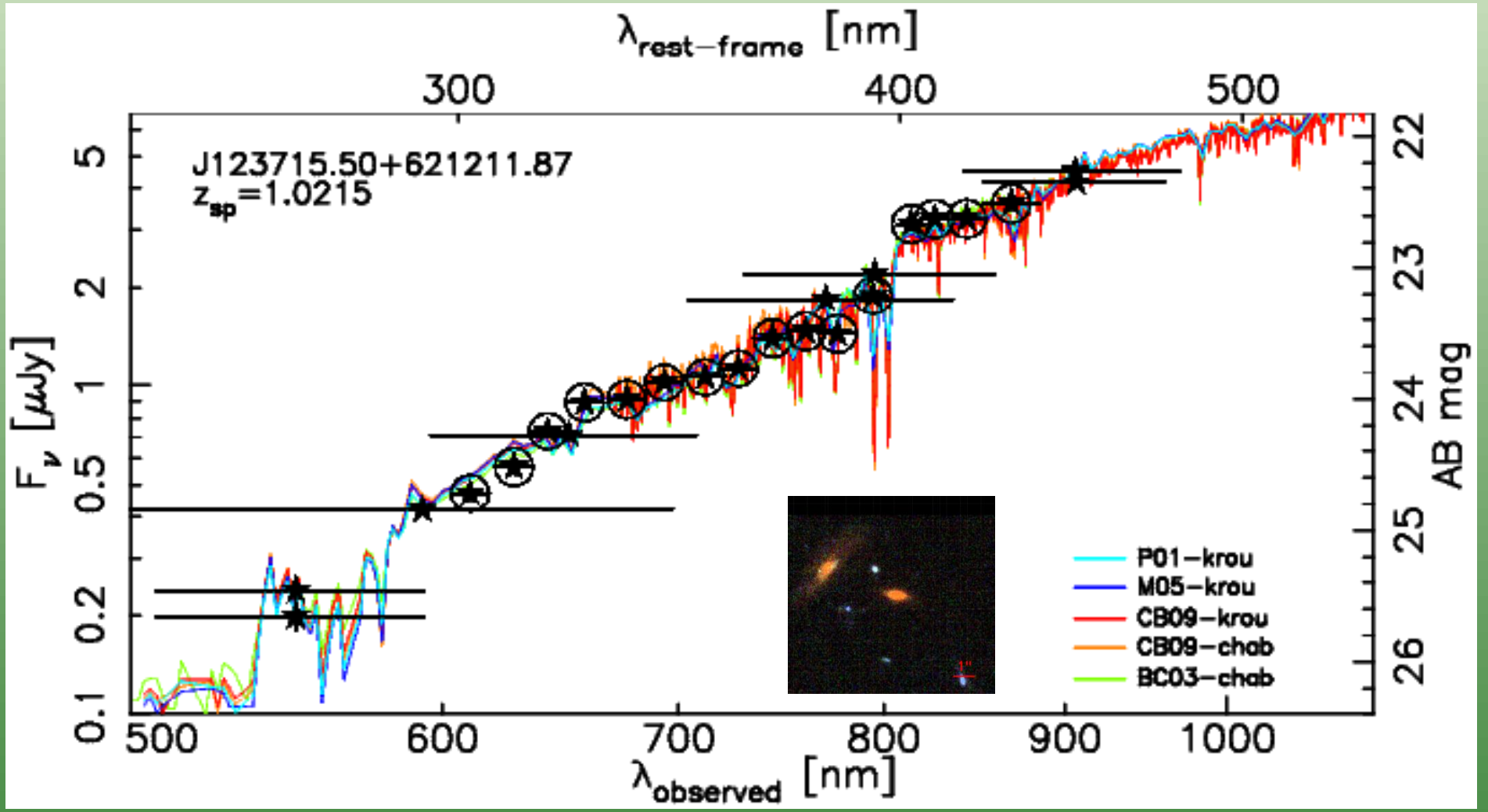
NOTES for second column (the one with filter names):
green background: filters observed and data reduced
khaki background: filters (partially) observed, data to be (or partially) reduced
red background: filters not observed yet

NOTES for first row (measured parameters and observational info):
orange background: data from observations
yellow background: data from calibration

Table of SHARDS filters and data quality

N	Filter	CWL	Width	A	B	X0	Y0	RMS	ZP		Δ(ZP)		$m_{3\sigma}$		$m_{75\%}$		seeing		Exposure time (sec)		Sky bkg (counts/s)		Transmission curve (txt)	Transmission curve plot (ps)	Calibration curve plot (ps)
									P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2	P1	P2			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)		(11)		(12)		(13)				(14)		(15)	(15)	(15)
1	F500W17	500.7	15.0	503.37	-1.323E-6	-315.7	1003.7	0.1	33.284	33.248									6300	3780	3.01	2.87	f500w17_transCurve	f500w17_transPlot	f500w17_calCurve
2	F517W17	517.4	16.5	520.31	-1.304E-6	-430.5	991.6	0.1															f517w17_transCurve	f517w17_transPlot	f517w17_calCurve
4	F534W17	534.0	17.6	538.51	-1.379E-6	-421.0	1055.2	0.1	33.227										4800		4.01		f534w17_transCurve	f534w17_transPlot	f534w17_calCurve
3	F551W17	550.6	13.9	555.01	-2.060E-6	-255.8	988.1	0.2	33.061										5190		8.39		f551w17_transCurve	f551w17_transPlot	f551w17_calCurve
5	F568W17	567.5	14.4	572.11	-2.117E-6	-289.8	1008.8	0.2															f568w17_transCurve	f568w17_transPlot	f568w17_calCurve
6	F585W17	585.1	15.1	588.69	-2.327E-6	-86.2	1021.2	0.1															f585w17_transCurve	f585w17_transPlot	f585w17_calCurve
7	F602W17	601.5	15.5	605.75	-2.277E-6	-212.5	1001.2	0.2															f602w17_transCurve	f602w17_transPlot	f602w17_calCurve
8	F619W17	618.7	15.8	623.14	-2.404E-6	-202.3	984.8	0.1	33.578	33.534	0.077		26.89		27.22		0.85		7920	7920	8.48	6.78	f619w17_transCurve	f619w17_transPlot	f619w17_calCurve
9	F636W17	636.4	16.2	641.37	-2.589E-6	-116.3	985.8	0.1	33.797	33.779	0.066	0.072	26.78	26.7	27.15	27.17	0.79	0.92	9180	9180	7.85	9.10	f636w17_transCurve	f636w17_transPlot	f636w17_calCurve

SHARDS: published papers



P-G+SHARDS (2013)

SHARDS Team Meeting I
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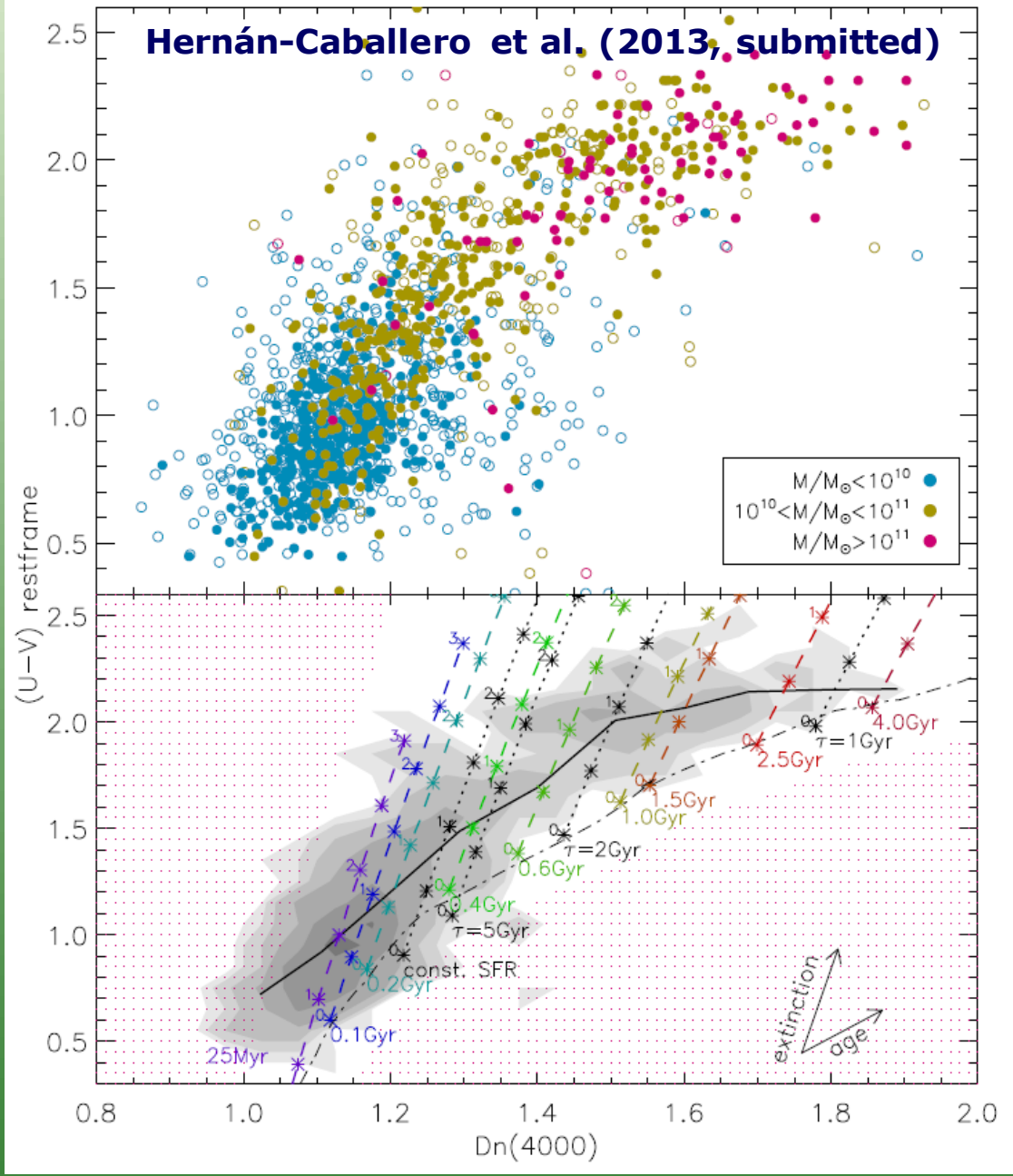
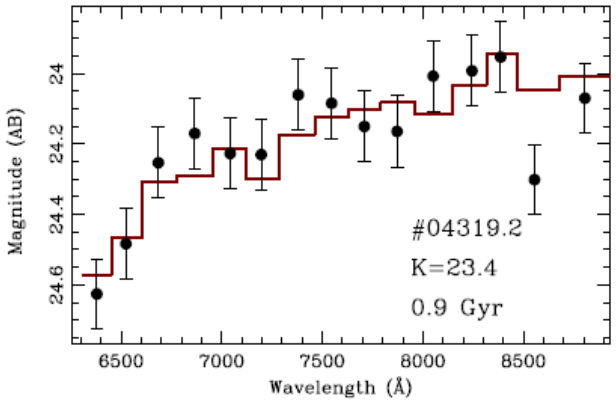
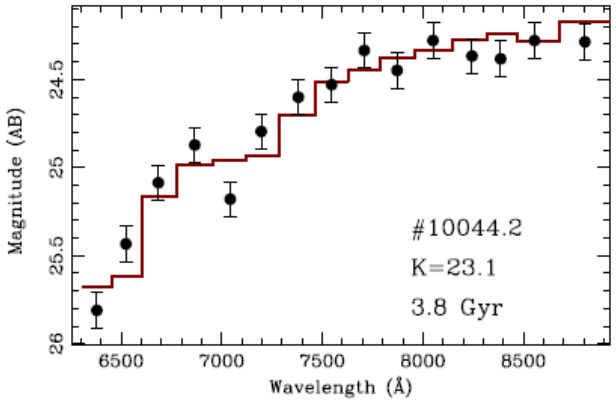
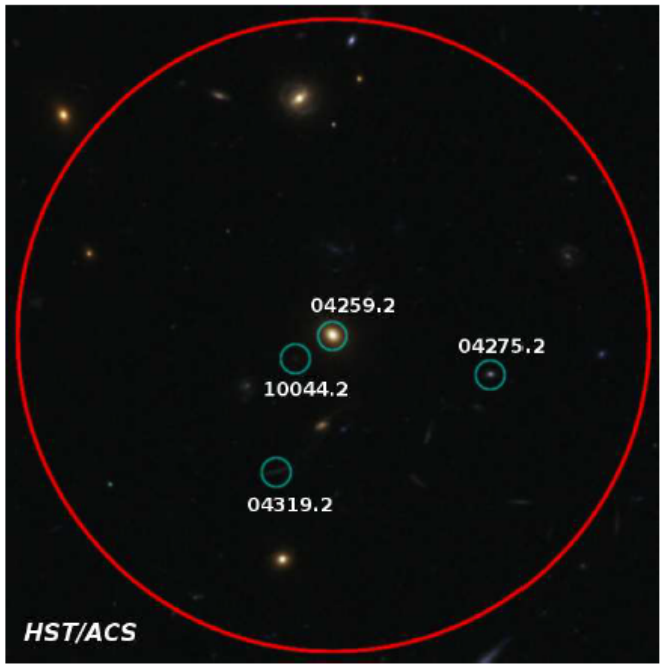
SHARDS: published papers

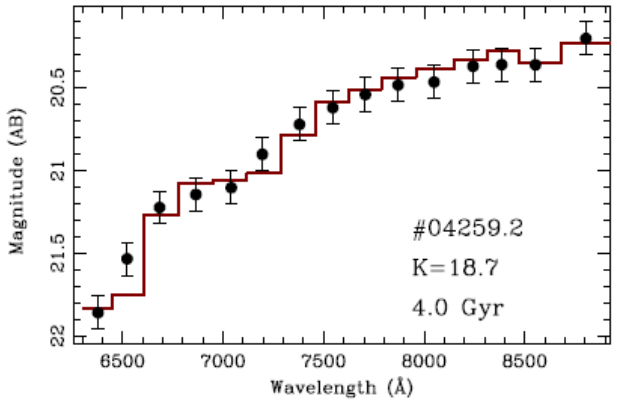


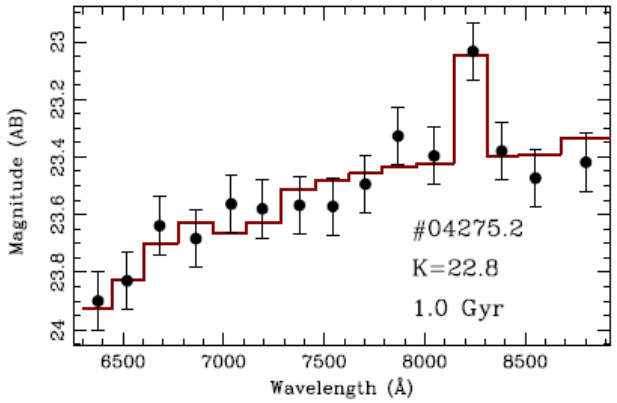
On-going work on papers





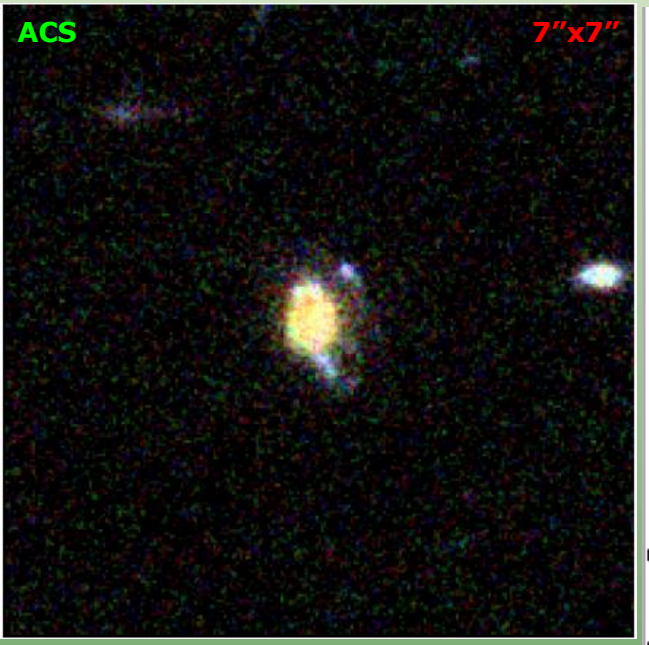


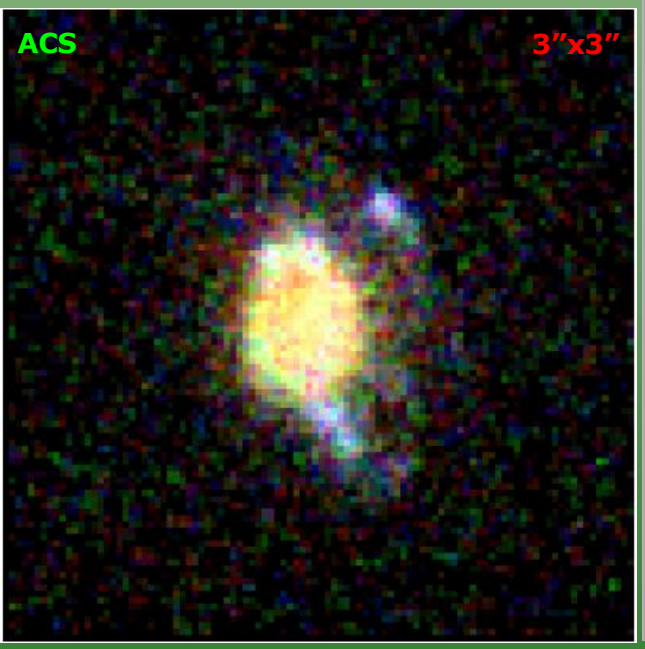


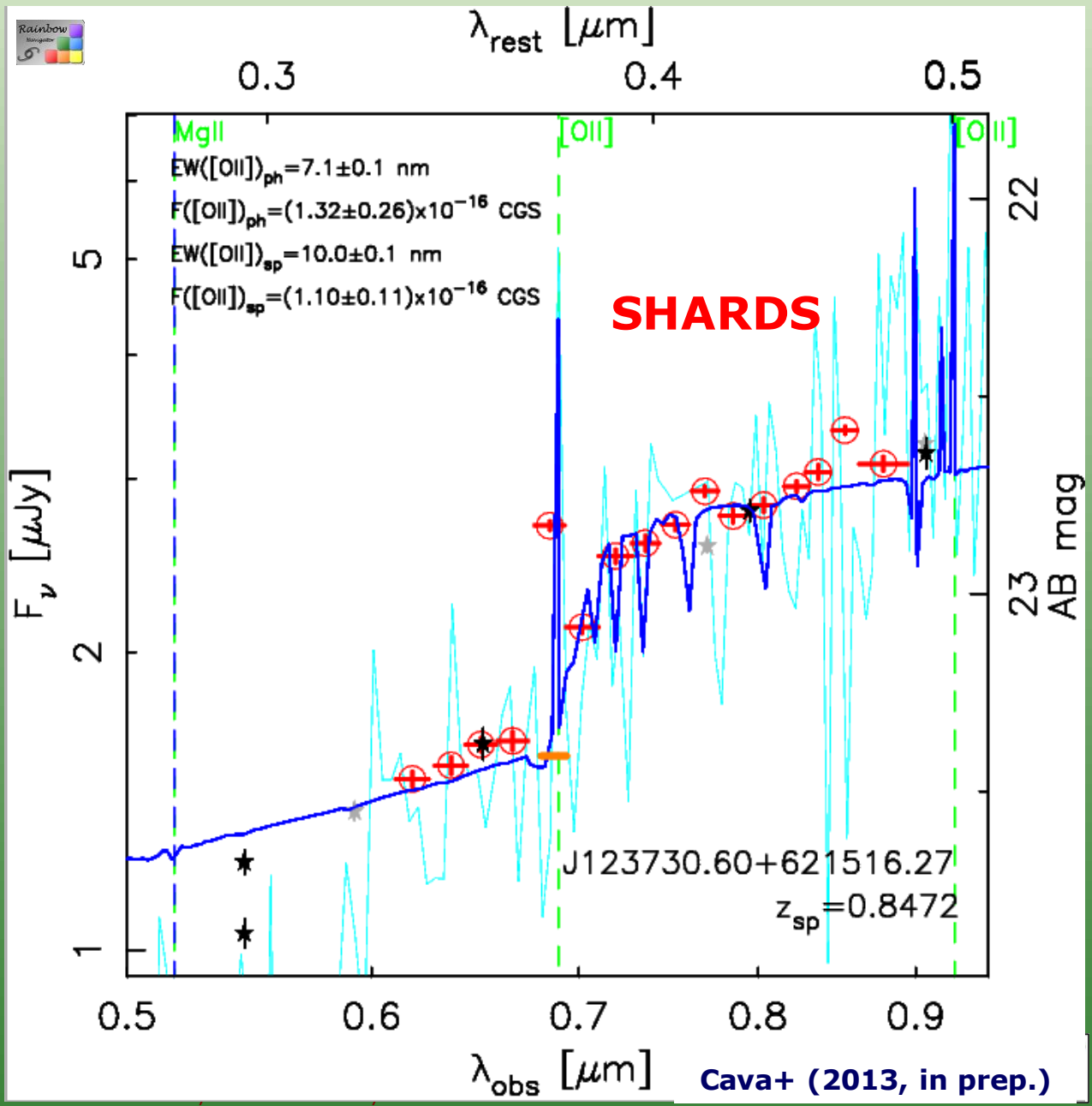


Ferreras et al. (2013, in prep.)

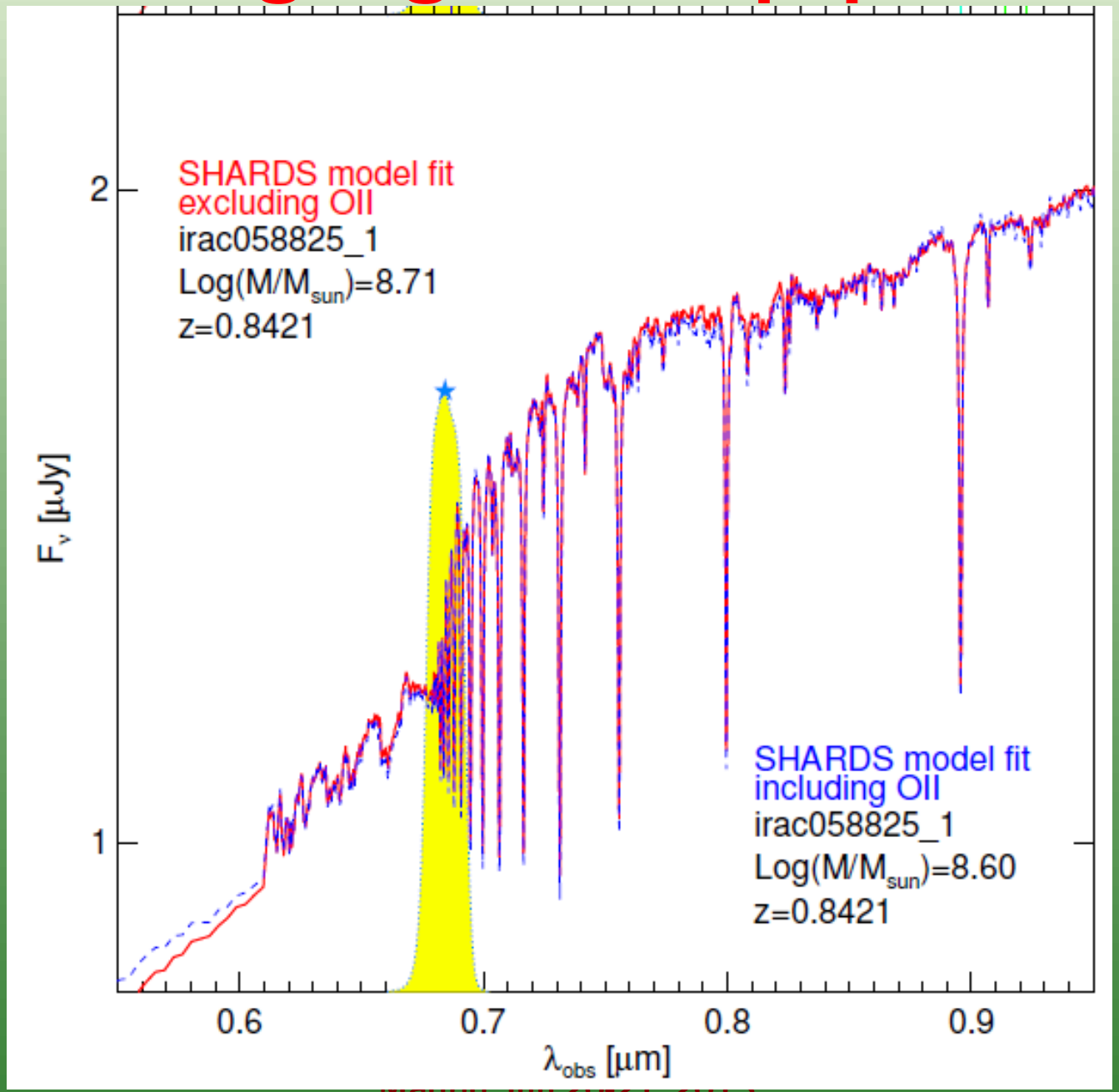
SHARDS: published papers





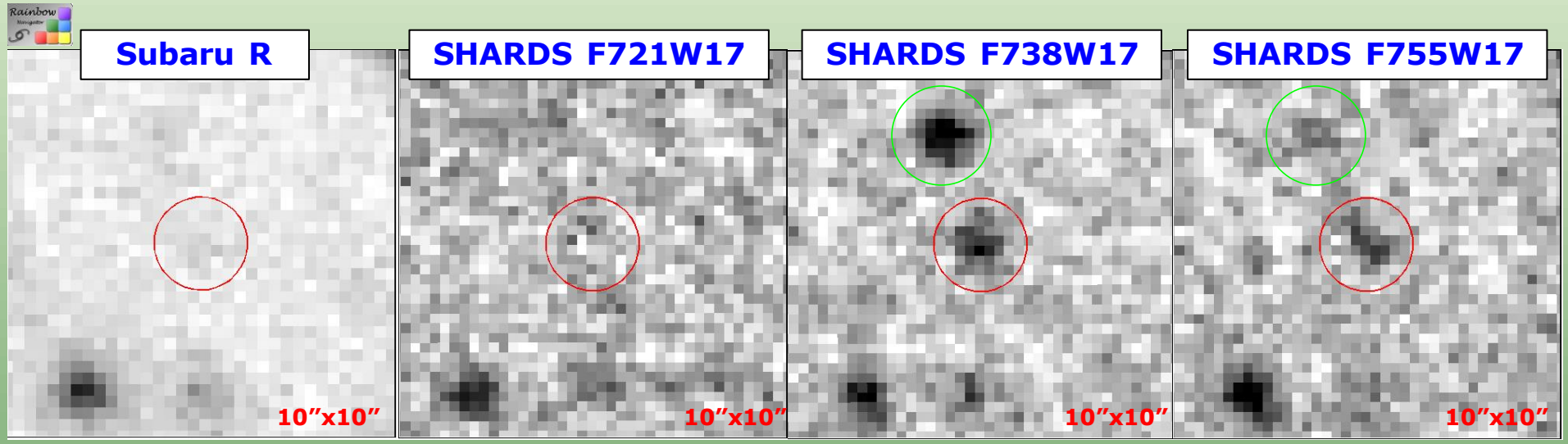


On-going work on papers

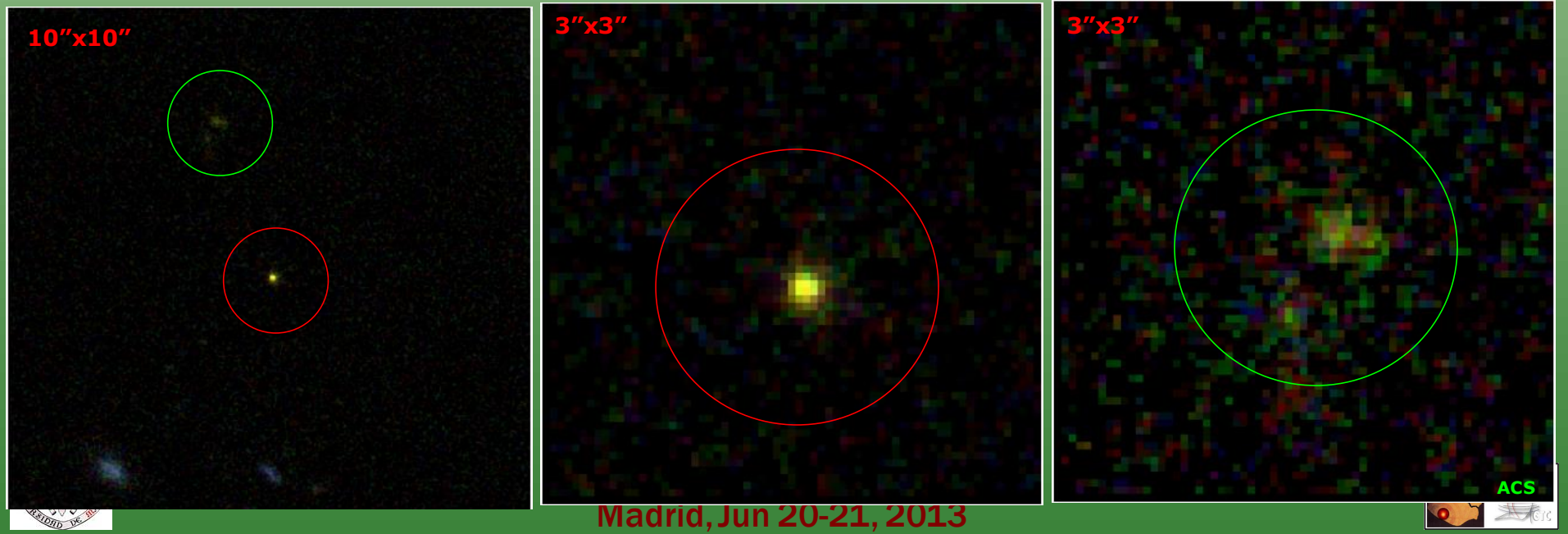


Cava et al. (2013, in prep.)

On-going work on papers



LAEs@z~5 (Rodríguez Espinosa+ 2013, in prep.)



On-going work on papers: signed papers

SHARDS papers

last edited by Antonio Cava 1 month, 1 week ago — Page history

Here all paper proposals will be posted. Please, write your title, leading author(s), interested people (if any at the time of posting a paper proposal; other people may add themselves afterwards), attach an abstract, and write the posting date and an estimation for the delivery date. In "Main Working Team" you can add your name if you are interested in working actively in the project and follow closely its development. Please, contact the leading authors for details. All SHARDS members will have an opportunity to join a project, and we will be all notified when a paper draft is ready.

When preparing a new paper please attain to the **SHARDS PUBLICATION POLICY.**

NOTE: Please use the following Template to create the Project Page (or ask us for help if needed): Template SHARDS000

Project ID	Title	Leader(s)	Main Working Team	Link to Abstract	Link to PDF	Date of post	Delivery date
SHARDS001	SHARDS: an optical spectro-photometric survey of distant galaxies	Pérez-González, Cava	ALL SHARDS Team	abstract_pgpg12a.txt	ms_shards_pgperezetal2012a_v2.pdf (revised draft) ms_shards_pgperezetal2012a_v3.pdf (revised after referee's comments)	July 4 2012	July 2012
SHARDS002	SHARDS: a comprehensive view of ELGs	Cava, Villar	Gallego, Pérez-González, Tresse	abstract_ELGs.txt		July 4 2012	2013A
SHARDS003	SHARDS: stellar populations and star formation	Hernan-Caballero, Alonso-Herrero	Pérez-González, Cardiel	abstract.txt			2013A

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Goals of this meeting

- Presentation of on-going and future projects (partially/fully) based on SHARDS data.
- Brain-storming to produce a list of specific papers with commitments and deadlines:
  - Legacy data papers.
  - General papers.
- What legacy products should we produce and circulate among team members?
- What and when will we do a public data release?
- Follow-ups and extensions.
- Approve publication and authorship policies.

SHARDS Team Meeting I
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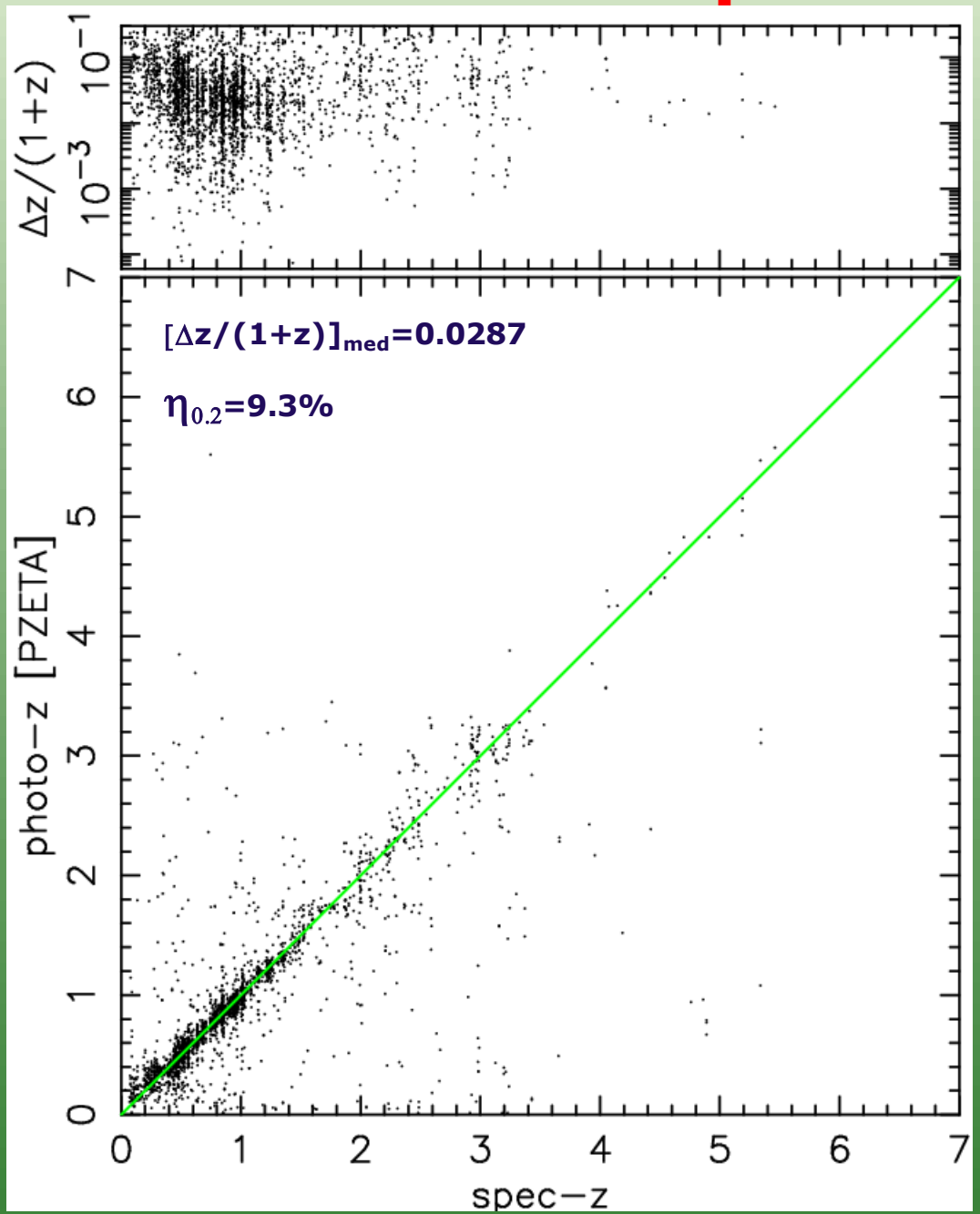
Discussion session: available resources

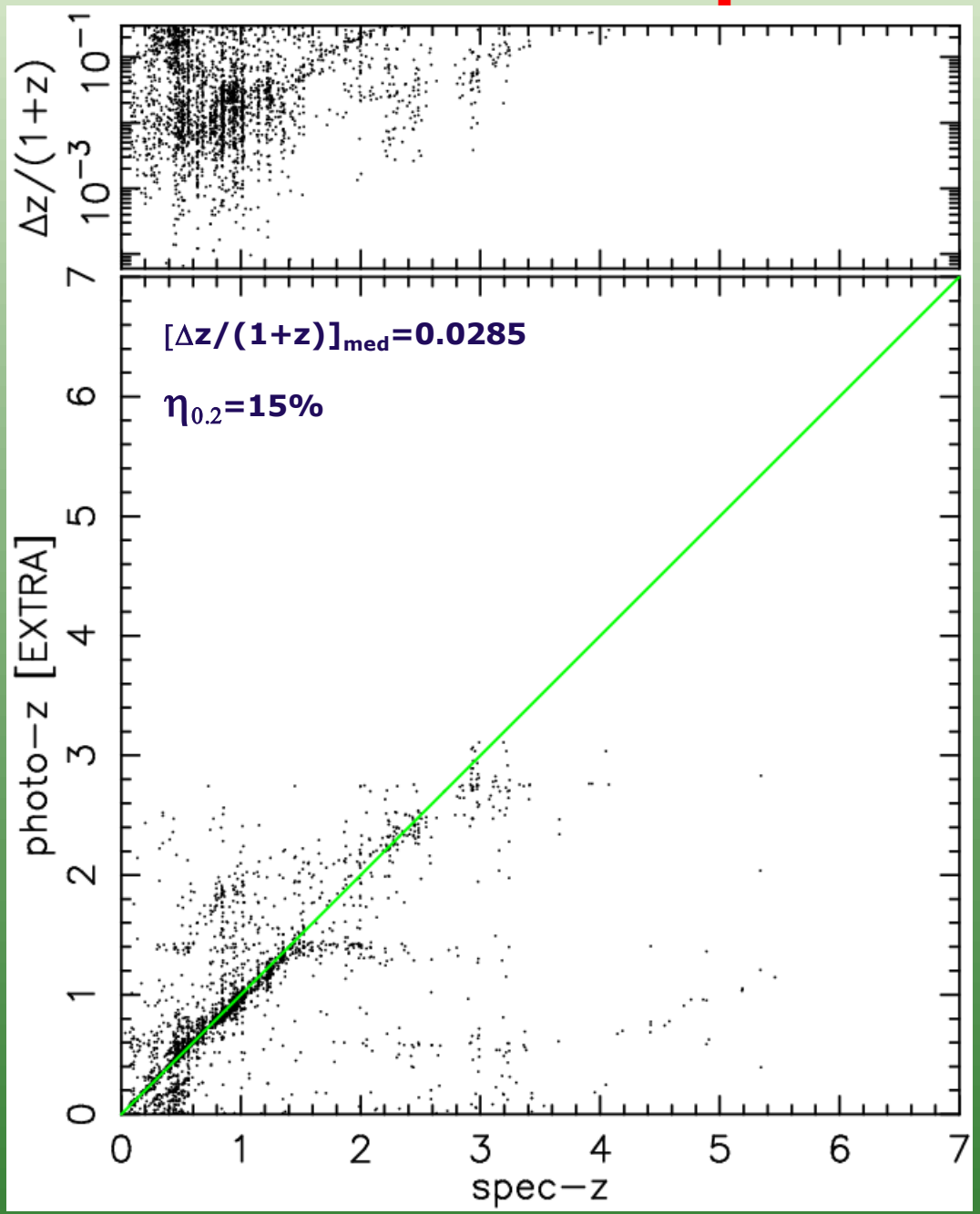
- Reduced and calibrated images (v1.13.6) for 16 bands (619 to 883 nm), 2 pointings. Released in July 2012 (with first paper).
- Merged SHARDS photometric catalogs (circular and "best" apertures). Combined selection at all bands, forced measurements.
- Filter characterization data.

- Reduced and calibrated images (v1.14.2) for entire dataset (500 to 941 nm, 2 pointings). Improvements: more data, better masking of faint objects and halos, better sky subtraction, improved WCS (0.2" problem in Subaru images).
- Merged SHARDS photometric catalogs (circular apertures).
- Combined catalog including ancillary data: Rainbow SHARDS_DR1 available.
- TFIT catalog (attached to CANDELS catalog).
- Advanced data products: SEDs, photo-z's, masses, SFRs, ages,...
- Emission line sources at interm- and high-z.
- Follow-up source lists.

Available resources: photo-z's



Available resources: photo-z's



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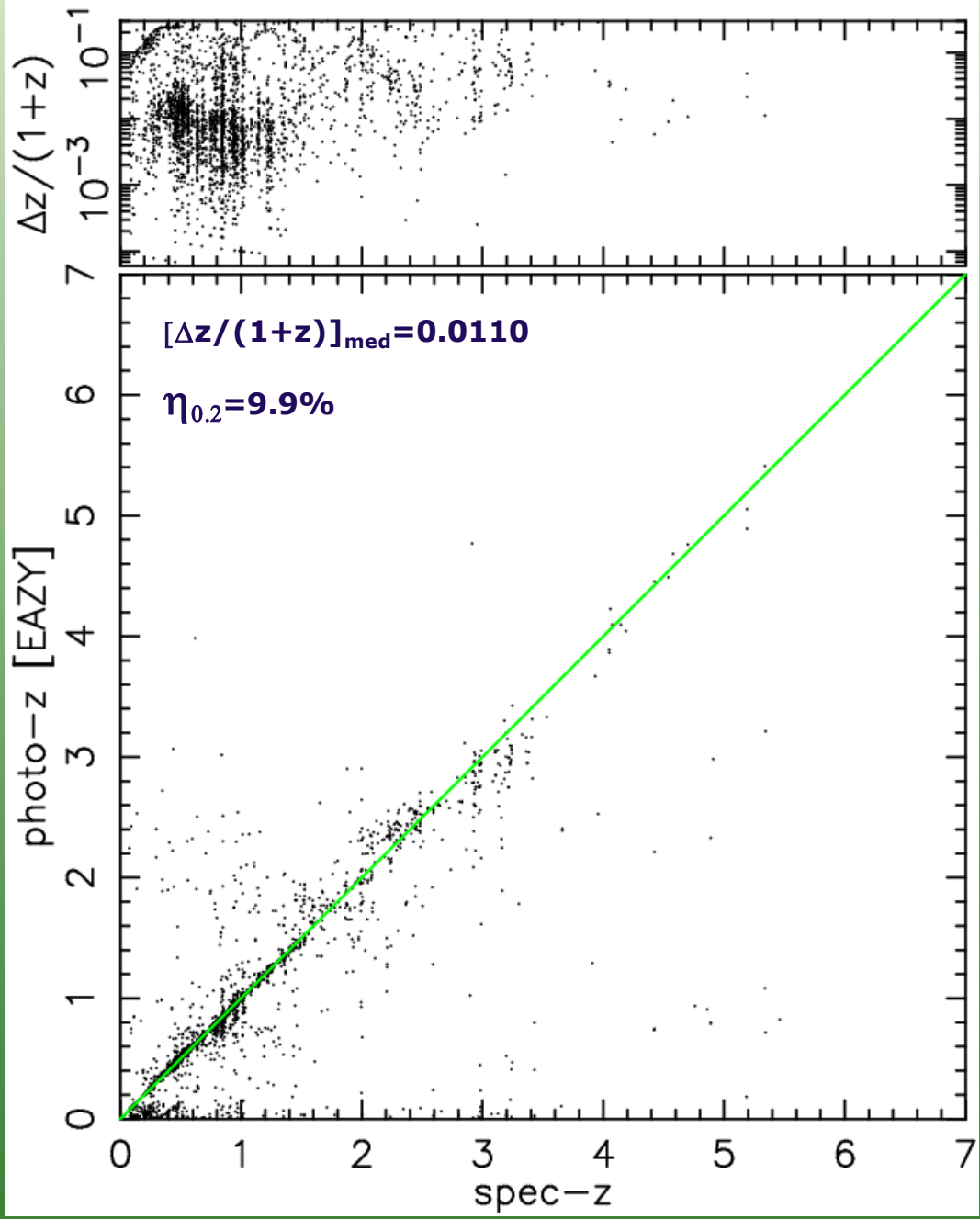

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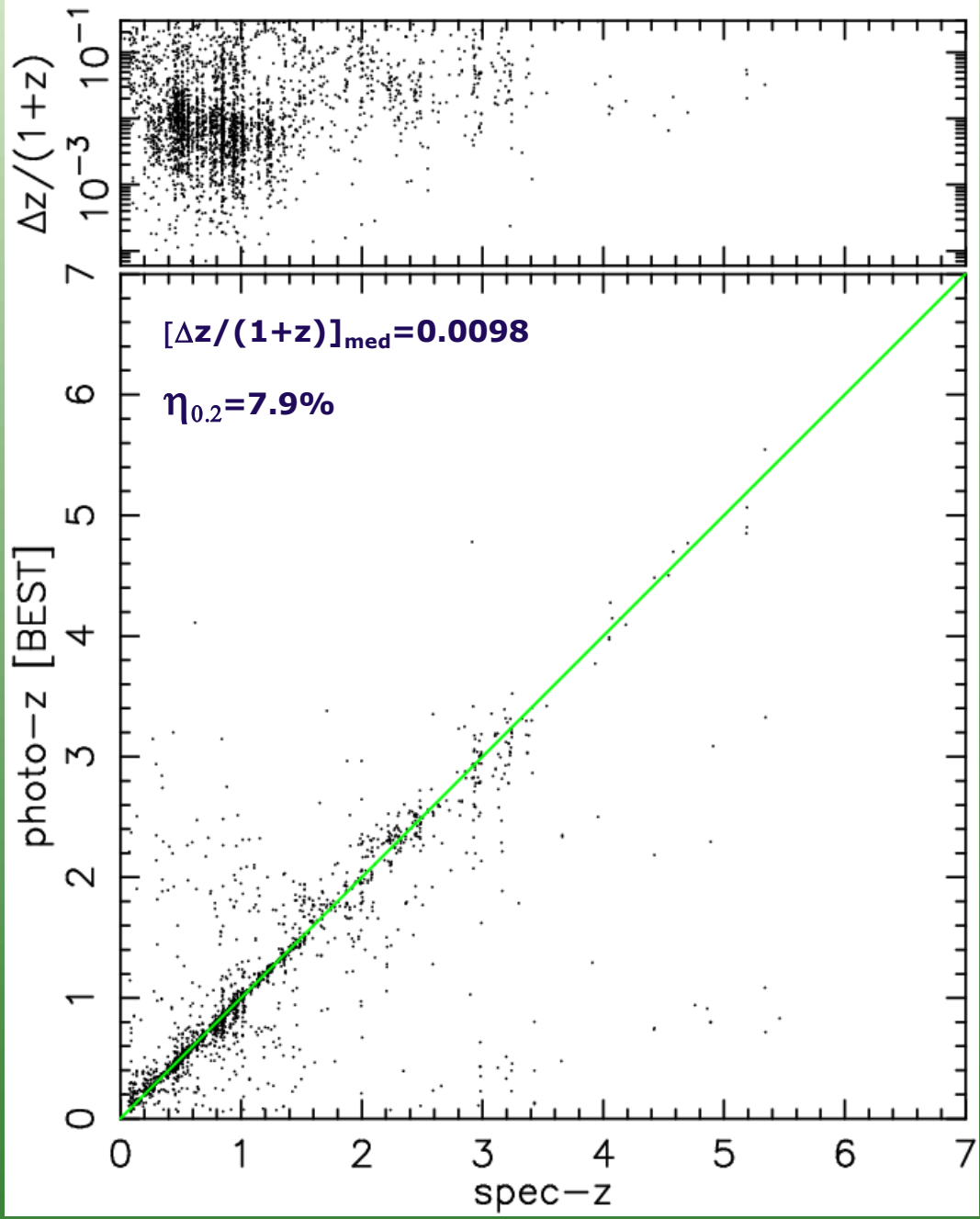

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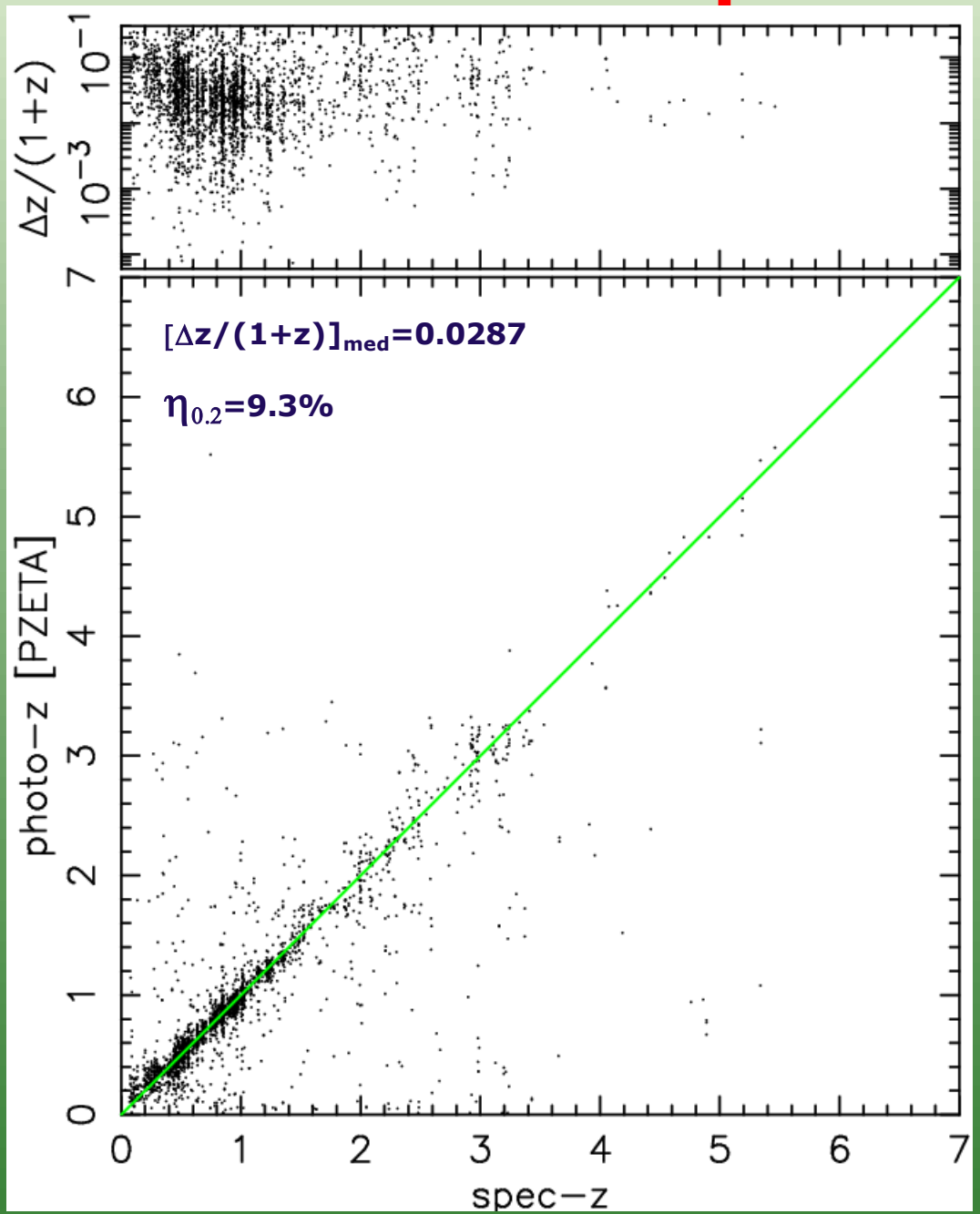

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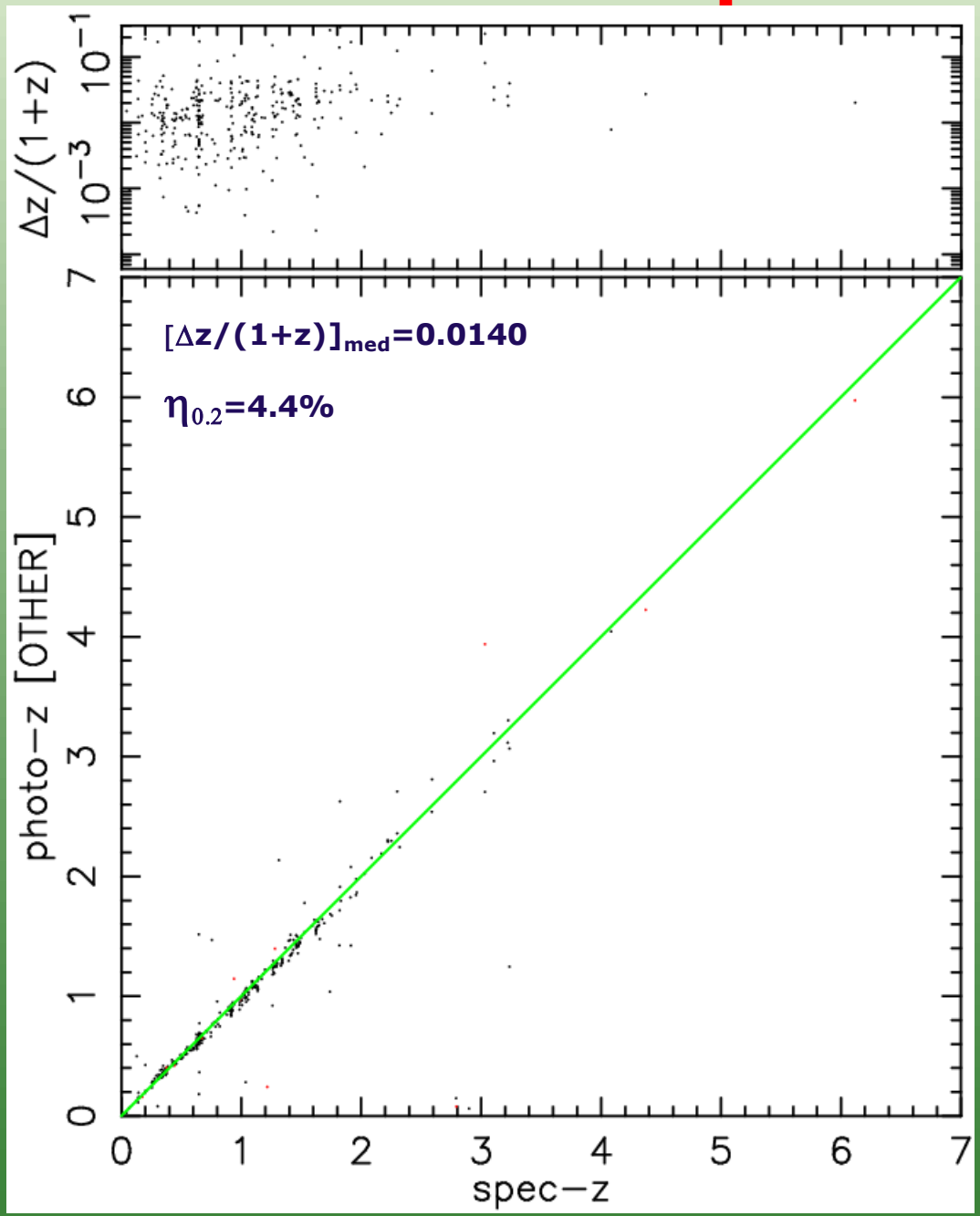

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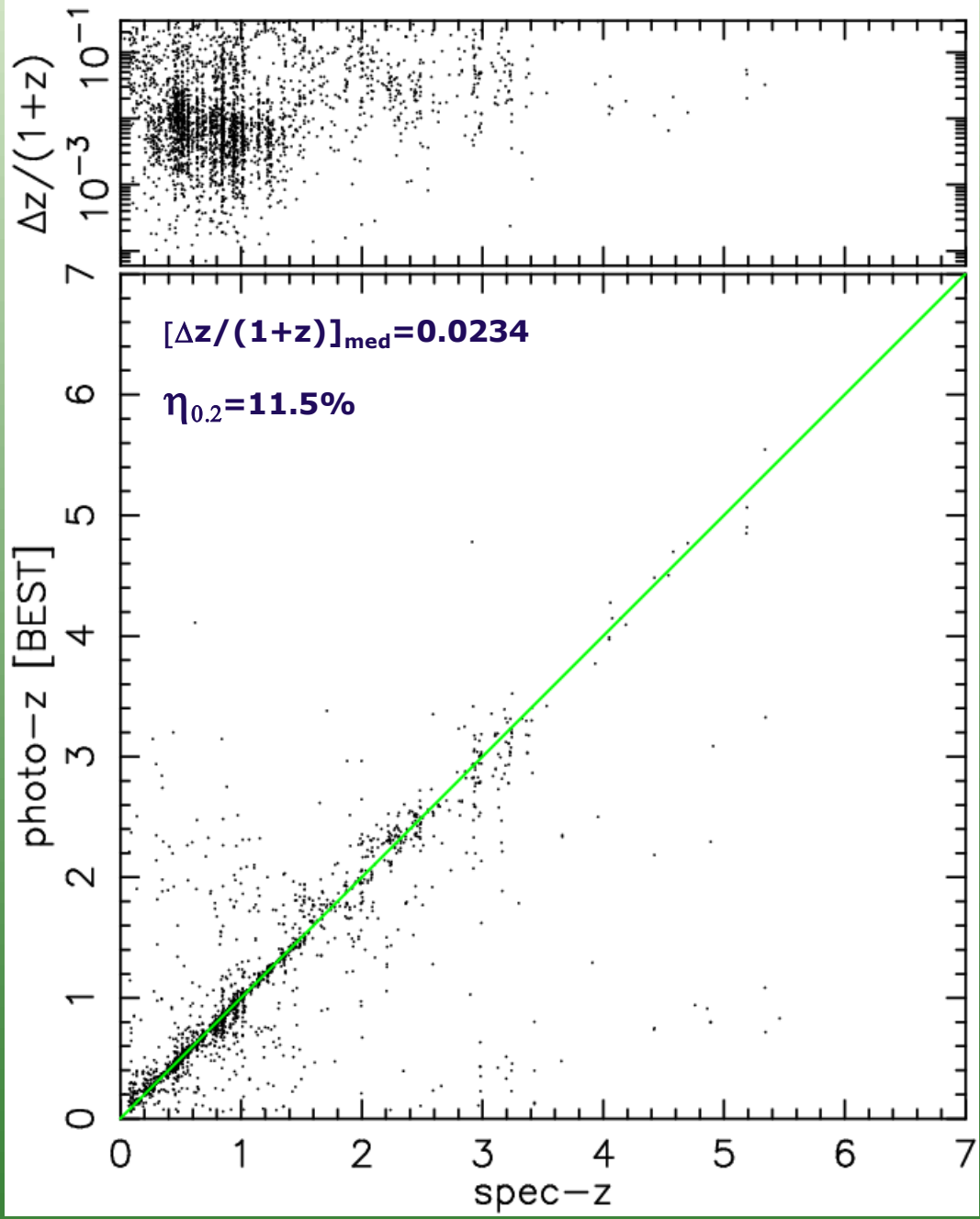

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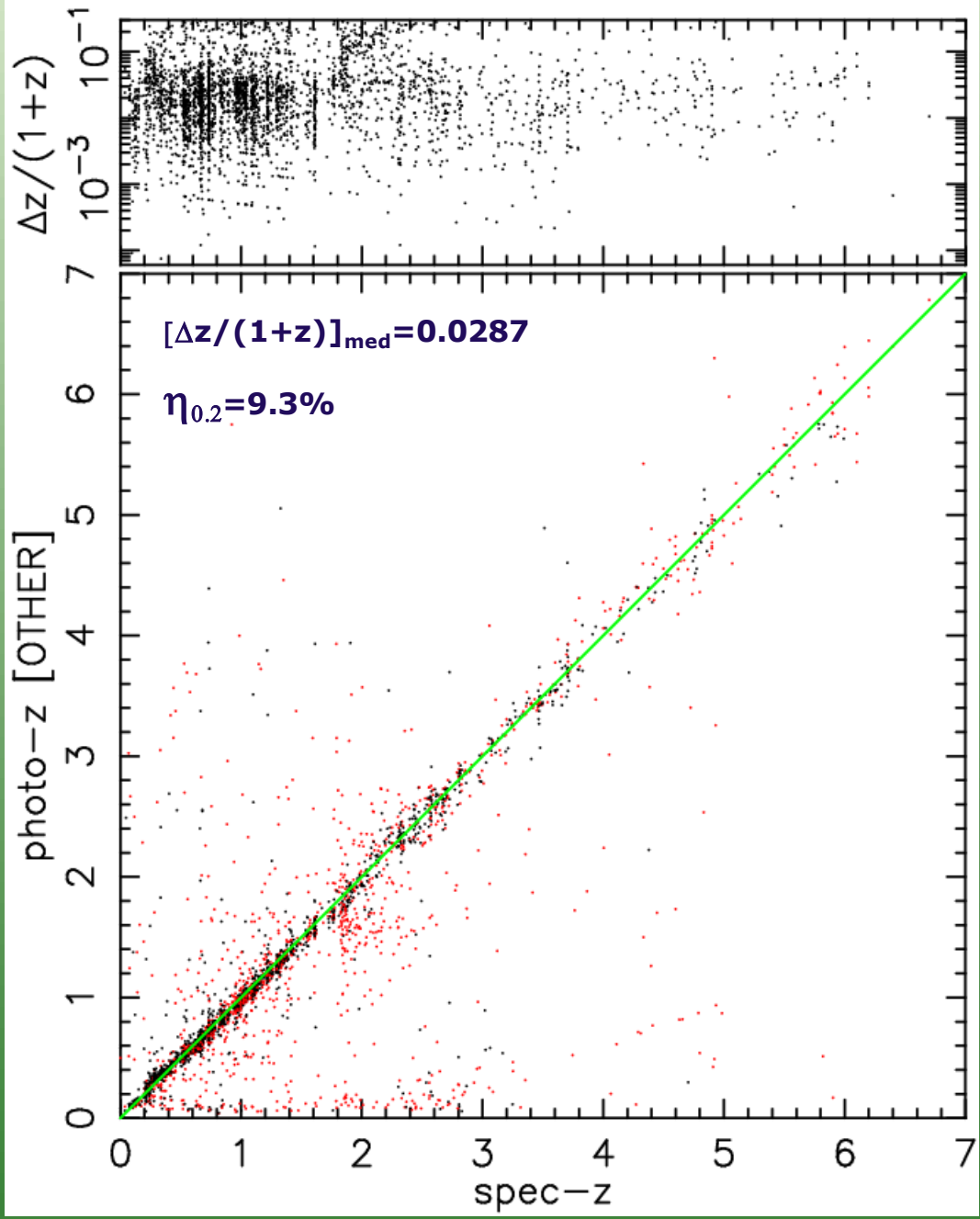
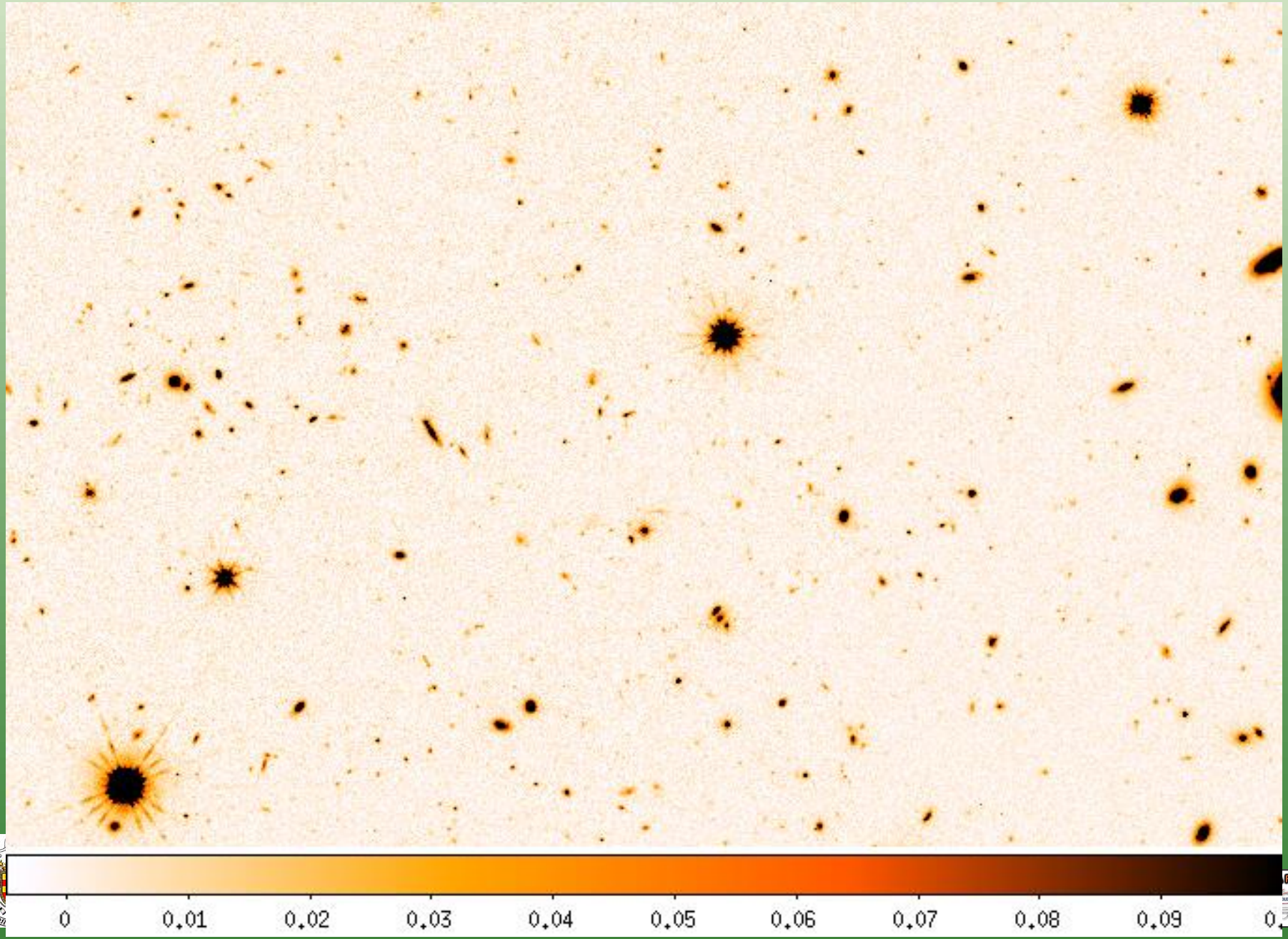
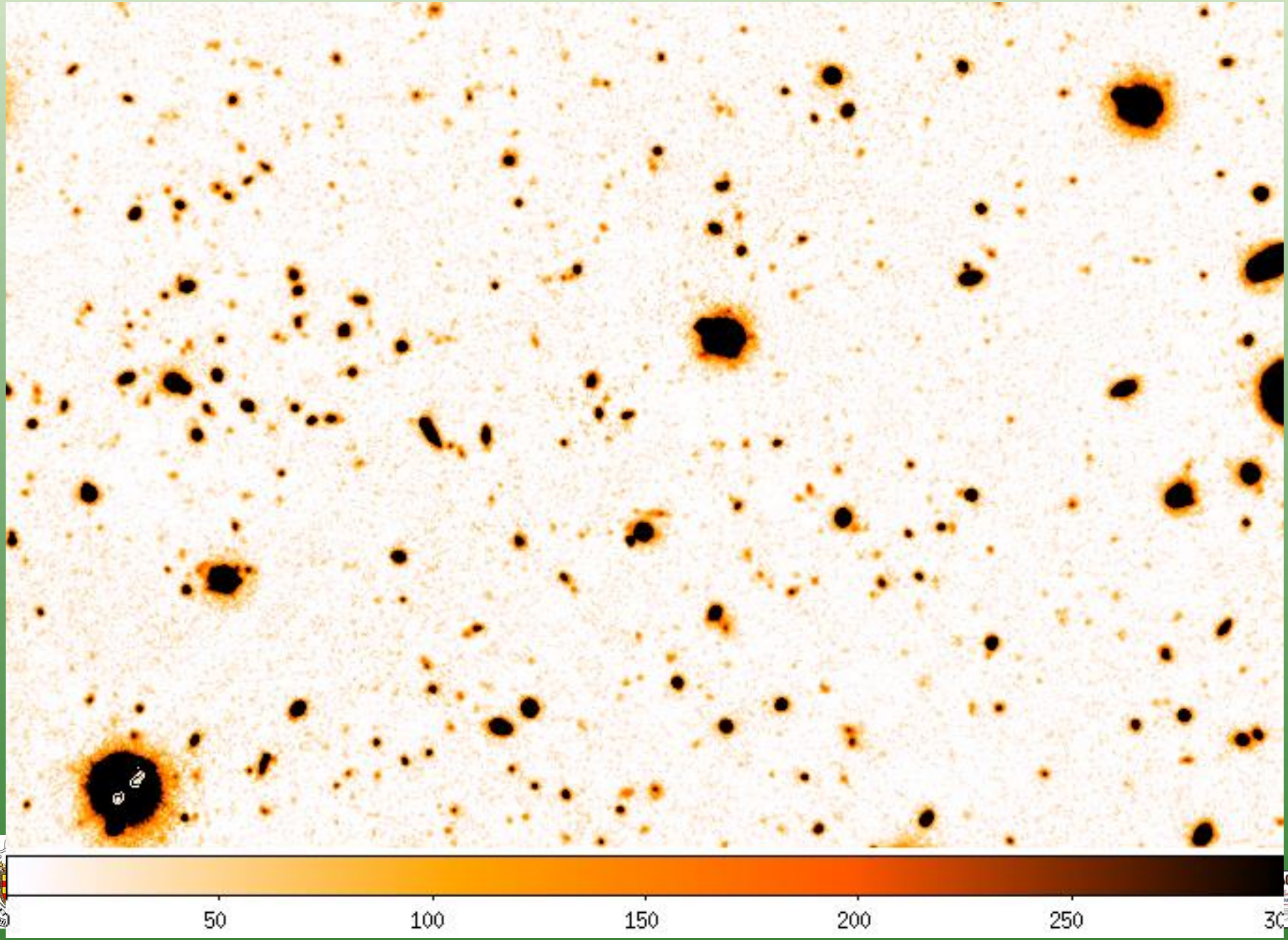


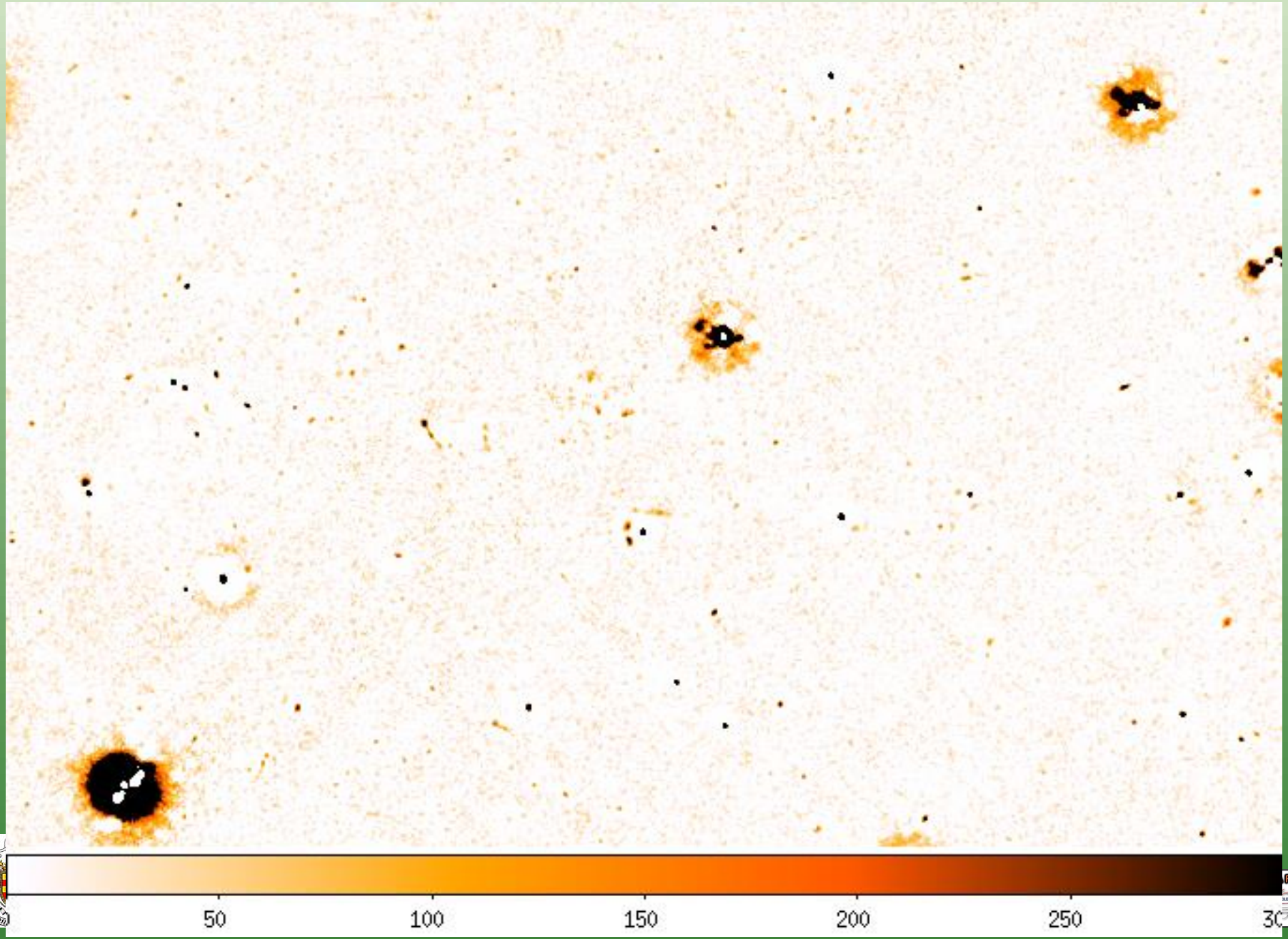
Available resources: TFIT photometry



Available resources: TFIT photometry



Available resources: TFIT photometry



Discussion session: authorship of SHARDS papers

- **Rules for co-I's and submission of papers using SHARDS data (to be discussed, edited, and approved):**
  http://shardsesogtc.pbworks.com/w/page/63414294/SHARDS%20PUBLICATION%20POLICY

Discussion session: follow-up and extensions

- **Spectroscopy: long-term program using WHT/GTC/… (Trujillo, Balcells).**
- **Spectroscopy: ultra-deep using GTC to target LAEs,… (Rodríguez-Espinosa).**
- **Spectroscopy: HST WFC3 grism (Barro).**
- **Photometry: SHARDS wrap-up: F913W25 filter in GOODS-N (P-G).**
- **Photometry: SHARDS-like survey in other fields (Ferreras, Trujillo) and clusters (Cava).**
- **Photometry: NIR extension (Barro, P-G).**

Ideas

- Age difference between massive and companion for stronger over-density.