J/A+A/576/A14 VEGAS-SSS photometry of NGC3115 (Cantiello+, 2015)

VEGAS-SSS. A VST early-type galaxy survey: analysis of small stellar systems.
Testing the methodology on the globular cluster system in NGC3115.
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Paolillo M., Iodice E., Romanowsky A.J., Forbes D.A., Raimondo G.,
Spavone M., La Barbera F., Puzia T.H., Schipani P.
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Abstract:
We present a study of globular clusters (GCs) and other small stellar systems (SSSs) in the field of NGC 3115, observed as part of the ongoing wide-field imaging survey VEGAS, carried out with the 2.6m VST telescope. We used deep g and i observations of NGC 3115, a well-studied lenticular galaxy that is covered excellently well in the scientific literature. This is fundamental to test the methodologies, verify the results, and probe the capabilities of the VEGAS-SSS. Leveraging the large field of view of the VST allowed us to accurately study the distribution and properties of SSSs as a function of galactocentric distance, well beyond ~20 galaxy effective radii, in a way that is rarely possible. Our analysis of colors, magnitudes, and sizes of SSS candidates confirms the results from existing studies, some of which were carried out with 8-10m class telescopes, and further extends them to previously unreached galactocentric distances with similar accuracy. In particular, we find a color bimodality for the GC population and a de Vaucouleurs profile for the surface density of GCs similar to the galaxy light profile. The radial color gradient of blue and red GCs previously found, for instance, by the SLUGGS survey with Subaru and Keck data, is further extended out to the largest galactocentric radii inspected, ~65kpc. In addition, the surface density profiles of blue and red GCs taken separately are well approximated by a r1/4 density profile, with the fraction of blue GCs being slightly larger at larger radii. We do not find hints of a trend for the red GC subpopulation and for the GC turnover magnitude to vary with radius, but we observe a ~0.2mag difference in the turnover magnitude of the blue and red GC subpopulations. Finally, from inspecting SSS sizes and colors, we obtain a list of ultracompact dwarf galaxies and GC candidates suitable for future spectroscopic follow-up. In conclusion, our study shows i) the reliability of the methodologies developed to study SSSs in the field of bright early-type galaxies, and ii) the great potential of the VEGAS survey to produce original results on SSSs science, mainly thanks to the wide-field imaging adopted.

Description:
We present g and i band photometry for ~47000 extended and point-like objects in the ~0.8 square degree area centred on NGC3115. For ~30000 object in the catalogue, structural parameters are also available. For each object equatorial coordinates, galactocentric distance from the photometric center of NGC3115, magnitudes in g and i bands (SDSS calibrated), colour, local extinction and sctructural parameters.

File Summary:

FileName	Lrecl	Records	Explanations
ReadMe	80	.	This file
table3.dat	154	47080	Positions, g and i magnitudes and sizes of the objects in the field of NGC 3115

See also:
J/A+A/564/L3 : JHK photometry of NGC 3115 globular clusters (Cantiello+, 2014)
J/AJ/148/32 : Globular cluster candidates in NGC 3115 (Jennings+, 2014)
J/A+A/611/A93 : NGC3115 & NGC1399 VEGAS-SSS globular clusters (Cantiello+ 2018)

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

Bytes	Format	Units	Label	Explanations
1- 5	I5	---	ID	[4/64352] VEGAS-SSS internal designation (VEGAS-SSS-N3115-NNNNN)
7- 17	F11.7	deg	RAdeg	Right ascension (J2000.0)
19- 28	F10.7	deg	DEdeg	Declination (J2000.0)
30- 33	F4.1	arcmin	Rgc	[0.3/37.1] Distance from centre

35- 41	F7.3	mag	gmag	?=-99 VST g-band magnitude
43- 49	F7.3	mag	e_gmag	?=-99 g-band magnitude error
51- 55	F5.3	---	CSg	[0/1] Sextractor g-band Class-Star parameter (2)
57- 63	F7.3	mag	imag	?=-99 VST i-band magnitude
65- 71	F7.3	mag	e_imag	?=-99 i-band magnitude error
73- 77	F5.3	---	CSi	[0/1] Sextractor i-band Class-Star parameter (2)
79- 85	F7.3	mag	g-i	?=-99 VST g-i colour index
87- 91	F5.3	mag	E(B-V)	[0.03/0.06] Local reddening value
93-100	F8.3	---	S/N	[4.5/6892]?=-999 Ishape S/N ratio
104-111	F8.3	arcsec	FWHM	[-564/970]?=-999 Full width at half maximum
115-122	F8.3	arcsec	E_FWHM	?=-999 FWHM positive uncertainty
125-132	F8.3	arcsec	e_FWHM	?=-999 FWHM negative uncertainty
135-143	F9.3	pc	Rh	[-3960/6879]?=-999 Half light radius form Ishape (adopted distance of NGC3115: 9.4Mpc)
145-152	F8.3	---	b/a	[-1/1]?=-999 Object minor to major axis ratio
154	I1	---	Com	[0/2] Object classification, 2=best (1)

Note (1): Object classification as follows:
  0 = sources common to both g and i-band catalogues, but no morphological
      information from Ishape, or rejected from the reference and best samples
  1 = sources in the reference sample (2.5%)
  2 = source in the best sample (0.4%)
Note (2): 1=point source (stellar), 0=extended (galaxy)

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References:
Cantiello et al., Paper II 2018A&A...611A..93C, Cat. J/A+A/611/A93

(End) M. Cantiello [INAF-OA Teramo, Italy], P. Vannier [CDS] 12-Mar-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*