Table 1. Description of Columns of the Master Catalog of Point Sources GUVcat_AISxSDSS_HSpoint*

Col	Column Name	Description
	columns 1-95: GALEX tags from *GUVmatch* **(Bianchi & Shiao 2020)**	
1	GALEX_ID	Source identifier from Casjobs *photobjall* table
2	PHOTOEXTRACTID	parent image from which source was extracted
3	MPSTYPE	GALEX survey (AIS, MIS, etc).
4	AVASPRA	R.A. of the center of the field where the object was measured
5	AVASPDEC	Dec. of the center of the field where the object was measured
6	FEXPTIME	FUV exposure time (sec)
7	NEXPTIME	NUV exposure time (sec)
8	GALEX_RA	J2000 right ascension of the GALEX source from Casjobs *photobjall* table
9	GALEX_DEC	J2000 declination of the GALEX source from Casjobs *photobjall* table
10	GALEX_GLON	Galactic longitude
11	GALEX_GLAT	Galactic latitude
12	TILENUM	GALEX "tile" number (pointing field)
13	IMG	image number (# exposure for visit)
14	SUBVISIT	subvisit number if exposure was divided
15	FOV_RADIUS	distance of the source from the center of the field in degrees
16	GALEX_TYPE	observation type (0=single, 1=multi)
17	BAND	1= NUV, 2= FUV, 3=both [17]
18	E_BV	Galactic reddening from Schlegel et al. (1998) maps
19	ISTHERESPECTRUM	=1 if there is a spectrum, =0 if not
20	CHKOBJ_TYPE	astrometry check type
21	FUV_MAG	FUV calibrated magnitude (ABmag system)
22	FUV_MAGERR	error of FUV calibrated magnitude
23	NUV_MAG	NUV calibrated magnitude (ABmag system)
24	NUV_MAGERR	error of NUV calibrated magnitude (ABmag system)
25	FUV_MAG_AUTO	FUV Kron-like elliptical aperture magnitude
26	FUV_MAGERR_AUTO	error on FUV AUTO mag
27	NUV_MAG_AUTO	NUV Kron-like elliptical aperture magnitude
28	NUV_MAGERR_AUTO	error on NUV Kron-like elliptical aperture magnitude
29	FUV_MAG_APER_4	FUV aperture magnitude (8pxl)
30	FUV_MAGERR_APER_4	error on FUV aperture magnitude (8pxl)
31	NUV_MAG_APER_4	NUV aperture magnitude (8pxl)
32	NUV_MAGERR_APER_4	error on NUV aperture magnitude (8pxl)
33	FUV_MAG_APER_6	FUV aperture magnitude (17pxl)
34	FUV_MAGERR_APER_6	error on FUV aperture magnitude (17pxl)
35	NUV_MAG_APER_6	NUV aperture magnitude (17pxl)
36	NUV_MAGERR_APER_6	error on NUV aperture magnitude (17pxl)
37	FUV_ARTIFACT	FUV artifact flag (logical OR near source)
38	NUV_ARTIFACT	NUV artifact flag (logical OR near source)
39	FUV_FLAGS	FUV extraction flags
40	NUV_FLAGS	NUV extraction flags
41	FUV_FLUX	FUV calibrated flux (micro Jy)
42	FUV_FLUXERR	error on FUV calibrated flux (micro Jy)
43	NUV_FLUX	NUV calibrated flux (micro Jy)
44	NUV_FLUXERR	error on calibrated flux (micro Jy)
45	FUV_X_IMAGE	source position along X in FUV image
46	FUV_Y_IMAGE	source position along Y in FUV image
47	NUV_X_IMAGE	source position along X in NUV image
48	NUV_Y_IMAGE	source position along Y in NUV image
49	FUV_FWHM_IMAGE	FUV FWHM assuming a Gaussian core
50	NUV_FWHM_IMAGE	NUV FWHM assuming a Gaussian core
51	FUV_FWHM_WORLD	FUV FWHM assuming a Gaussian core (WORLD units)
52	NUV_FWHM_WORLD	NUV FWHM assuming a Gaussian core (WORLD units)
53	NUV_CLASS_STAR	S/G classifier output
54	FUV_CLASS_STAR	S/G classifier output
55	NUV_ELLIPTICITY	NUV 1.-B_IMAGE/A_IMAGE
56	FUV_ELLIPTICITY	FUV 1.-B_IMAGE/A_IMAGE
57	NUV_THETA_J2000	NUV position angle (East of North)
58	NUV_ERRTHETA_J2000	error on NUV position angle (East of North)
59	FUV_THETA_J2000	FUV position angle (East of North)
60	FUV_ERRTHETA_J2000	error on FUV position angle (East of North)
61	FUV_NCAT_FWHM_IMAGE	FUV FWHM_IMAGE value from -fd-ncat.fits (pxl)
62	FUV_NCAT_FLUX_RADIUS_3	FUV FLUX RADIUS #3 (fd-ncat) (pxls) [0.80]
63	NUV_KRON_RADIUS	NUV Kron radius in units of A or B
64	NUV_A_WORLD	NUV rms profile along major axis (WORLD units)
65	NUV_B_WORLD	NUV rms profile along minor axis (WORLD units)

Table 1—Continued

Col	Column Name	Description
66	FUV_KRON_RADIUS	FUV Kron radius in units of A or B
67	FUV_A_WORLD	FUV rms profile along major axis (WORLD units)
68	FUV_B_WORLD	rms profile along minor axis (WORLD units)
69	NUV_WEIGHT	NUV effective exposure (seconds)
70	FUV_WEIGHT	FUV effective exposure (seconds)
71	PROB	probability of the FUV and NUV match
72	SEP	separation between FUV and NUV positions of the source (arcsec)
73	NUV_POSERR	error on position of the NUV source (arcsec)
74	FUV_POSERR	error on position of the FUV source (arcsec)
75	IB_POSERR	interband position error (arcsec)
76	NUV_PPERR	NUV Poisson position error (arcsec)
77	FUV_PPERR	FUV Poisson position error (arcsec)
78	CORV	GUVcat tag - see Bianchi et al. (2017)
79	GRANK	GUVcat tag - see Bianchi et al. (2017)
80	NGRANK	GUVcat tag - see Bianchi et al. (2017)
81	PRIMGID	GUVcat tag - see Bianchi et al. (2017)
82	GROUPGID	GUVcat tag - see Bianchi et al. (2017)
83	GRANKDIST	GUVcat tag - see Bianchi et al. (2017)
84	NGRANKDIST	GUVcat tag - see Bianchi et al. (2017)
85	PRIMGIDDIST	GUVcat tag - see Bianchi et al. (2017)
86	GROUPGIDDIST	GUVcat tag - see Bianchi et al. (2017)
87	GROUPGIDTOT	GUVcat tag - see Bianchi et al. (2017)
88	DIFFFUV	GUVcat tag - see Bianchi et al. (2017)
89	DIFFNUV	GUVcat tag - see Bianchi et al. (2017)
90	DIFFFUVDIST	GUVcat tag - see Bianchi et al. (2017)
91	DIFFNUVDIST	GUVcat tag - see Bianchi et al. (2017)
92	SEPAS	separation between primary and secondary (arcsec) -see Bianchi et al. (2017)
93	SEPASDIST	separation between primary and secondary (arcsec), distance criterion -see Bianchi et al. (2017)
94	INLARGEOBJ	if the source is in the footprint of an extended object INLARGEOBJ gives the object name (as in $GUVcat$) XX:name; where XX=GA (galaxy), GC (globular cluster), OC (open cluster), SC (other stellar clusters) otherwise INLARGEOBJ is set to "N"
95	LARGEOBJSIZE	size of the extended object: $1.25 \times$D25 for galaxies, $2\times$ radius for stellar clusters. LARGEOBJSIZE=0. if INLARGEOBJ = 'N' (for size sources: see Bianchi et al. (2017))
	columns 96-216: SDSS tags from GUVmatch [a]	
217	DSTARCSEC	separation between GALEX and SDSS-match position (arcsec)
218	DISTANCERANK	rank of multiple matches: =0 if this is the only SDSS match, =1 if this is the closest (to GALEX source) of multiple SDSS matches
219	REVERSEDISTANCERANK	>0 if this SDSS source matches more than one GALEX source
220	MULTIPLEMATCHCOUNT	number of multiple SDSS matches to the GALEX source
221	REVERSEMULTIPLEMATCHCOUNT	number of multiple GALEX sources matched by this SDSS source
222	GALEX_JID	IAU-style source identifier (from the GALEX coordinates)
	columns 223-231: distilled information from the Simbad match results	
223	SIMBAD_MATCH_nearest	closest SIMBAD match (within 5″)[b]
224	SIMBAD_MAIN_TYPE_nearest	"MAIN TYPE" of closest SIMBAD match (within 5″)[b]
225	SIMBAD_OTHER_TYPES_nearest	"OTHER TYPES" of the closest SIMBAD match within 5″ [b] (stellar objects)
226	SIMBAD_SP_TYPE_nearest	spectral type of the closest SIMBAD match within 5″ [b]
227	SIMBAD_ANGDIST_nearest	separation (arcsec) of the closest SIMBAD match (within 5″)[b] from the GALEX position
228	N_SIMBAD_MATCHES_3AS	PLACEHOLDER - not used - number of SIMBAD matches within 3″
228	N_SIMBAD_MATCHES_5AS	(NSIMBADMATCHES5AS) number of SIMBAD matches within 5″
229	N_SIMBAD_MATCHES_10AS	(NSIMBADMATCHES10AS) number of SIMBAD matches within 10″
231	N_SIMBAD_MATCHES_30AS	PLACEHOLDER - not used - number of SIMBAD matches within 30″
	columns 232-257: main parameters from the GALEX "BEST-VISIT"	
232	GALEX_BESTVIS_OBSDATE	date of GALEX best observation [asci] (year-month-day, e.g. : 2005-11-05, or " == " if no visit found)
233	GALEX_BESTVIS_NUVTIME	time of the NUV exposure of the GALEX best observation (hrs:min:sec, e.g., 08:23:51, or " == " if no visit found)
234	GALEX_BESTVIS_FUVTIME	time of the FUV exposure of the GALEX best observation (hrs:min:sec, e.g., 08:23:51, or " == " if no visit found)
235	GALEX_BESTVIS_EPOCHDECIMAL	time of GALEX best observation, in year.decimal. for convenience of computing the difference with other epochs; e.g.,2003.7556152 (-888 for the 25 sources with no visit-level detection within 3″) Range: 2003.4315 to 2012.0968
236	GALEX_BESTVIS_EPOCHNUVDECIMAL	time of GALEX best NUV observation, in year.decimal; range: 2003.4315−2012.0968
237	GALEX_BESTVIS_EPOCHFUVDECIMAL	time of GALEX best FUV observation,

Table 1—Continued

Col	Column Name	Description
		in year.decimal; range: 2003.4315−2009.4059 among the 71148 visits with FUV detection;
		-888 for 216 visits with no FUV detection
238	GALEX_BESTVIS_FUV_WEIGHT	FUV effective exposure time of the GALEX best visit[b]
239	GALEX_BESTVIS_NUV_WEIGHT	NUV effective exposure time of the GALEX best visit[b]
240	GALEX_BESTVIS_FOV_RADIUS	distance of the source from the detector center (decimal degrees)[b]
241	GALEX_BESTVIS_RA	RA of the GALEX source measured in the best visit (decimal degrees)[b]
242	GALEX_BESTVIS_DEC	Dec of the GALEX source measured in the best visit (decimal degrees)[b]
243	GALEX_BESTVIS_FUVMAG	FUV mag of the GALEX source measured in the best visit (ABmag)[b]
244	GALEX_BESTVIS_FUVMAGERR	error of FUV mag of the GALEX source measured in the best visit (ABmag)[b]
245	GALEX_BESTVIS_NUVMAG	NUV mag of the GALEX source measured in the best visit (ABmag)[b]
246	GALEX_BESTVIS_NUVMAGERR	error of NUV mag of the GALEX source measured in the best visit (ABmag)[b]
247	GALEX_NVIS_FUV	number of FUV observations found [integer, 0 if no FUV visit found] (from 0 to 1412)
248	GALEX_NVIS_NUV	number of NUV observations found [integer, 0 if no NUV visit found] (from 0 to 3491)
249	GALEX_MIN_FUVMAG	minimum value of FUVMAG among all matched visits (excluding those where FUVMAG=-999)
250	GALEX_MIN_FUVMAGERR	error of minimum FUVMAG among all matched visits
251	GALEX_MAX_FUVMAG	maximum value of FUVMAG among all matched visits
252	GALEX_MAX_FUVMAGERR	error of maximum FUVMAG value
253	GALEX_MIN_NUVMAG	minimum value of NUVMAG among all matched visits
254	GALEX_MIN_NUVMAGERR	error of minimum NUVMAG among all matched visits
255	GALEX_MAX_NUVMAG	maximum value of NUVMAG among all matched visits
256	GALEX_MAX_NUVMAGERR	error of maximum NUVMAG value
257	GALEX_BESTVIS_DISTARCSEC	separation between input coordinates and best-visit match of the GALEX source
	selected tags from the Gaia DR3 match results (Gaia *source* table) and multiple-matches tags	
258	GAIA_ID	Gaia source_ID of the closest Gaia DR3 match (-888 if no match)
259	DISTARCMIN	distance betwee the Gaia counterpart and the GALEX source (arcmin)
260	GAIA_RA	RA of the Gaia counterpart (decimal degrees)
261	GAIA_DEC	DEC of the Gaia counterpart (decimal degrees)
262	MMRANK_GAIA	multiple-match rank (Section 2.2)
263	RMMRANK_GAIA	reverse multiple-match rank (Section 2.2)
264	NMMRANK_GAIA	number of Gaia DR3 matches within the match radius
265	RNMMRANK_GAIA	reverse number of matches (of this Gaia source to other GALEX sources)
266	PARALLAX	Gaia DR3 parallax (mas)
267	PARALLAX_ERROR	error on Gaia DR3 parallax (mas)
268	PARALLAX_OVER_ERROR	parallax/error from gaia DR3
269	PM	proper motion from Gaia DR3 (mas)
270	PMRA	RA component of proper motion from Gaia DR3 (mas)
271	PMRA_ERROR	error on RA component of proper motion from Gaia DR3 (mas)
272	PMDEC	Dec component of proper motion from Gaia DR3 (mas)
273	PMDEC_ERROR	error on Dec component of proper motion from Gaia DR3 (mas)
274	ASTROMETRIC_N_GOOD_OBS_AL	Number of Gaia observations for the solution
275	RUWE	from Gaia DR3 *source* table
276	ASTROMETRIC_EXCESS_NOISE	from Gaia DR3 *source* table
277	ASTROMETRIC_EXCESS_NOISE_SIG	from Gaia DR3 *source* table
278	DUPLICATED_SOURCE PHOT_G_MEAN_MAG	from Gaia DR3 *source* table
279	PHOT_G_MEAN_FLUX_OVER_ERROR	from Gaia DR3 *source* table
280	PHOT_BP_MEAN_MAG	from Gaia DR3 *source* table
281	PHOT_BP_MEAN_FLUX_OVER_ERROR	from Gaia DR3 *source* table
282	PHOT_RP_MEAN_MAG	from Gaia DR3 *source* table
283	PHOT_RP_MEAN_FLUX_OVER_ERROR	from Gaia DR3 *source* table
284	RADIAL_VELOCITY	from Gaia DR3 *source* table
285	RADIAL_VELOCITY_ERROR	from Gaia DR3 *source* table
	tags selected from Gaia DR3 table *vary_summary*	
286	VARI_SUMMARY_GAIA_ID	from Gaia DR3 table *vari_summary*
287	PHOT_VARIABLE_FLAG	from Gaia DR3 table *vari_summary*
288	NON_SINGLE_STAR	from Gaia DR3 table *vari_summary*
289	IN_QSO_CANDIDATES	from Gaia DR3 table *vari_summary*
290	IN_GALAXY_CANDIDATES	from Gaia DR3 table *vari_summary*
291	MIN_MAG_G_FOV	from Gaia DR3 table *vari_summary*
292	MAX_MAG_G_FOV	from Gaia DR3 table *vari_summary*
293	MEAN_MAG_G_FOV	from Gaia DR3 table *vari_summary*
294	MEDIAN_MAG_G_FOV	from Gaia DR3 table *vari_summary*
295	RANGE_MAG_G_FOV	from Gaia DR3 table *vari_summary*
296	TRIMMED_RANGE_MAG_G_FOV	from Gaia DR3 table *vari_summary*
297	STD_DEV_MAG_G_FOV	from Gaia DR3 table *vari_summary*
298	SKEWNESS_MAG_G_FOV	from Gaia DR3 table *vari_summary*
299	KURTOSIS_MAG_G_FOV	from Gaia DR3 table *vari_summary*
300	IN_VARI_CLASSIFICATION_RESULT	values can be False, True, or -888 if no match exists

Table 1—Continued

Col	Column Name	Description
301	IN_VARI_RRLYRAE	values can be False, True, or -888 if no match exists
302	IN_VARI_CEPHEID	values can be False, True, or -888 if no match exists
303	IN_VARI_PLANETARY_TRANSIT	values can be False, True, or -888 if no match exists
304	IN_VARI_SHORT_TIMESCALE	values can be False, True, or -888 if no match exists
305	IN_VARI_LONG_PERIOD_VARIABLE	values can be False, True, or -888 if no match exists
306	IN_VARI_ECLIPSING_BINARY	values can be False, True, or -888 if no match exists
307	IN_VARI_ROTATION_MODULATION	values can be False, True, or -888 if no match exists
308	IN_VARI_MS_OSCILLATOR	values can be False, True, or -888 if no match exists
309	IN_VARI_AGN	values can be False, True, or -888 if no match exists
310	IN_VARI_MICROLENSING	values can be False, True, or -888 if no match exists
311	IN_VARI_COMPACT_COMPANION	values can be False, True, or -888 if no match exists
distance (and range) computed from Gaia parallax and parallax_error		
312	DISTANCE_GAIA_PC	distance (in pc) from parallax (value = -888.0 if no match exists)
313	DISTANCE_GAIA_ERRPLUS	maximum distance (in pc) applying parallax error
314	DISTANCE_GAIA_ERRMINUS	minimum distance (in pc) applying parallax error

[*]These columns are available for all sources, even those that are eliminated from the analysis

[a]SDSS_ID NCHILD SDSS_RA SDSS_RA_ERROR SDSS_DEC SDSS_DEC_ERROR SDSS_TYPE PSFMAG_U PSFMAG_G PSFMAG_R PSF-MAG_I PSFMAG_Z PSFMAGERR_U PSFMAGERR_G PSFMAGERR_R PSFMAGERR_I PSFMAGERR_Z EXPMAG_U EXPMAG_G EXPMAG_R EXPMAG_I EXPMAG_Z EXPMAGERR_U EXPMAGERR_G EXPMAGERR_R EXPMAGERR_I EXPMAGERR_Z EXPAB_U EXPAB_G EX-PAB_R EXPAB_I EXPAB_Z EXPABERR_U EXPABERR_G EXPABERR_R EXPABERR_I EXPABERR_Z DEVMAG_U DEVMAG_G DEV-MAG_R DEVMAG_I DEVMAG_Z DEVMAGERR_U DEVMAGERR_G DEVMAGERR_R DEVMAGERR_I DEVMAGERR_Z DEVAB_U DEVAB_G DEVAB_R DEVAB_I DEVAB_Z DEVABERR_U DEVABERR_G DEVABERR_R DEVABERR_I DEVABERR_Z PETROMAG_U PETROMAG_G PETROMAG_R PETROMAG_I PETROMAG_Z PETROMAGERR_U PETROMAGERR_G PETROMAGERR_R PETROMAGERR_I PETRO-MAGERR_Z FLAGS1 FLAGS2 FLAGS_U FLAGS_G FLAGS_R FLAGS_I FLAGS_Z EDGE U_SAT G_SAT R_SAT I_SAT Z_SAT U_CR G_CR R_CR I_CR Z_CR PROBPSF_U PROBPSF_G PROBPSF_R PROBPSF_I PROBPSF_Z PSFFWHM_U PSFFWHM_G PSFFWHM_R PSFFWHM_I PSFFWHM_Z SPECOBJ_ID PLATE MJD FIBER_ID REDSHIFT REDSHIFTERR SPECTYPE CLASS SUBCLASS CLASS_PERSON ELODIESP-TYPE B_V_COLOR TEFF LOGG METALLICITY ELODIE_REDSHIFT ELODIE_REDSHIFTERR PROPERMOTION USNO_RED1 USNO_RED2 USNO_BLUE1 USNO_BLUE2 RUN RERUN CAMCOL FIELD

[c]value is =-888 if no match