

Table 1. Columns description of catalog <http://paperdata.china-vo.org/Li.Hefan/22/sgr-hvs/table.csv>.

Name	Units	Description
source_id	-	Unique source identifier of Gaia EDR3
ra	deg	Right ascension
dec	deg	Declination
parallax	mas	Parallax
parallax_error	mas	Error of parallax
pmra	mas/year	Proper motion in right ascension direction
pmra_error	mas/year	Error of proper motion in right ascension direction
pmdec	mas/year	Proper motion in declination direction
pmdec_error	mas/year	Error of proper motion in declination direction
phot_g_mean_mag	mag	G-band mean magnitude
g_abs_mag	mag	G-band absolute magnitude
phot_bp_mean_mag	mag	Integrated BP mean magnitude
phot_rp_mean_mag	mag	Integrated RP mean magnitude
survey	-	Surveys from which the radial velocity is derived
surveyid	-	Survey identifiers from which the radial velocity
teff	K	Effective temperature
teff_error	K	Error of effective temperature
logg	dex	Surface gravity
logg_error	dex	Error of surface gravity
feh	dex	Metallicity
feh_error	dex	Error of metallicity
rv	km/s	Radial velocity
rv_error	km/s	Error of radial velocity
n_rv	-	Number of transits used to compute radial velocity
dist	kpc	Heliocentric distance
dist_error_lower	kpc	Lower uncertainty on heliocentric distance
dist_error_upper	kpc	Upper uncertainty on heliocentric distance
x	kpc	Cartesian galactocentric x coordinate
x_error_lower	kpc	Lower uncertainty on x
x_error_upper	kpc	Upper uncertainty on x
y	kpc	Cartesian galactocentric y coordinate

Table 1 *continued on next page*

Table 1 (*continued*)

Name	Units	Description
y_error_lower	kpc	Lower uncertainty on y
y_error_upper	kpc	Upper uncertainty on y
z	kpc	Cartesian galactocentric z coordinate
z_error_lower	kpc	Lower uncertainty on z
z_error_upper	kpc	Upper uncertainty on z
U	km/s	Cartesian Galactocentric velocity component U
U_error_lower	km/s	Lower uncertainty on U
U_error_upper	km/s	Upper uncertainty on U
V	km/s	Cartesian Galactocentric velocity component V
V_error_lower	km/s	Lower uncertainty on V
V_error_upper	km/s	Upper uncertainty on V
W	km/s	Cartesian Galactocentric velocity component W
W_error_lower	km/s	Lower uncertainty on W
W_error_upper	km/s	Upper uncertainty on W
r_gc	kpc	Galactocentric distance
r_gc_error_lower	kpc	Lower uncertainty on r_gc
r_gc_error_upper	kpc	Upper uncertainty on r_gc
v_gc	km/s	Galactocentric total velocity
v_gc_error_lower	km/s	Lower uncertainty on v_gc
v_gc_error_upper	km/s	Upper uncertainty on v_gc
dr_min	-	Normalized distance when the closest approach
dr_min_error_lower	-	Lower uncertainty on dr_min
dr_min_error_upper	-	Upper uncertainty on dr_min
dv	km/s	Velocity difference when the closest approach
dv_error_lower	km/s	Lower uncertainty on dv
dv_error_upper	km/s	Upper uncertainty on dv
t_trace	Myr	Trace back time
t_trace_error_lower	Myr	Lower uncertainty on t_trace
t_trace_error_upper	Myr	Upper uncertainty on t_trace
P_ub	-	Unbound possibility
P_Sgr	-	Probablity of the star originating from the Sgr