

IGSL

- POSITIONS: Tycho, CU3-QSO, PPMXL, SDSS, GSC23, 2MASS, EPC, OGLE
 - PROPER MOTIONS: Tycho, CU3-QSO (e.g. 0), SDSS (Munn), PPMXL
 - MAGNITUDES (B_J, R_F): Tycho, GSC23, SDSS, OGLE, EPC
 - MAGNITUDES (G, Grvs): Tycho, SDSS, OGLE, EPC, GSC23
 - CLASSIFICATION (star/non-star): Tycho, CU3-QSO, SDSS, GSC23, 2MASS
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- Planned 2011, delivery soon

Outstanding issues

- 1) Cutoff at $R_F=21$ (Request Bastian)
- 2) Change of Base Astrometric Catalog (Request Bastian)
- 3) Inclusion of EPC/OGLE catalogs (Request Altmann,Wyrzykowski)
- 4) Inclusion of HIP IDs (Request Lammers)
- 5) Add discussion of Binary systems to documentation (Request Els)
- 6) Update error values in the IGSL (Request Hernandez/Blagoródnova)
- 7) Include Grvs (Request Sartoretti)
- 8) Change determination of SourceID (Following Fabricius email 18/06/2012)
- 9) Check Attitude Source Catalogues flag (Question Hoar email 25/05/2012)
- 10) No RV standards indicated (Discussion Katz, summary 30/06/2012)
- 11) Cleanup MDB dictionary (Bastian)
- 12) Add solutionID (Bastian)

Wiki: [CU3:_Auxiliary_Data:_Initial_Gaia_Source_List:_IGSL_3&instance=Gaia](https://www.wikidata.org/wiki/Property:CU3:_Auxiliary_Data:_Initial_Gaia_Source_List:_IGSL_3&instance=Gaia)

IGSL Progress + Future

2007 IGSL 1.0 (Tycho/UCAC2/SDSS DR6/QSO/GSC-PMs)

- Positions Priority: Tycho2 - CU3QSO - UCAC2 - SDSS6 - GSC23
- Proper Motions: UCAC2 - Tycho2 - (GSC23)
- Magnitudes in GSC23: Tycho2 - GSC23 - SDSS

▪ 2010 IGSL 2.0 / ASC (ditto UCAC3/SDSS DR7/2MASS)

- Main difference to r=23 and including 2MASS

▪ 2012 IGSL + ASC flag

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2012 IGSL + ASC flag

- New Flags / Fields: Parallax, HIPPARCOS IDs, new catalog flags
- New concepts:
 - No mid-mission catalog - New surveys only for CTE
 - no faint end ($r < 21$) - CTE catalog elsewhere
 - GSC Mags/positions, PPMXL proper motions
- Contributors: Tycho, PPMXL, 2MASS, SDSS, SSS, GSC23, CU3-QSO, OGLE, EPC...
- Questionable: UCAC4, APOP,

Name	Description	Type	Units
solutionId	Solution Identifier	long	
sourceId	source identifier	long	
alpha	Right Ascension at catalogue epoch	double	rad
delta	Declination at catalogue epoch	double	rad
▶alphaError	Error in Right Ascension	float	rad
▶deltaError	Error in Declination	float	rad
alphaEpoch	Mean Epoch of Right Ascension	float	GaiaTime
deltaEpoch	Mean Epoch of Declination	float	GaiaTime
sourcePosition	Source of the position estimate	byte	
▶muAlpha	Proper motion in RA * at catalogue epoch	float	mas/year
▶muDelta	Proper motion in DEC at catalogue epoch	float	mas/year
▶muAlphaError	Error in Proper motion in RA	float	mas/year
▶muDeltaError	Error in proper motion in DEC	float	mas/year
sourceMu	Source of the proper motions	byte	
galacticLon	Galactic Longitude	float	deg
galacticLat	Galactic Latitude	float	deg
eclipticLon	Ecliptic Longitude	float	deg
eclipticLat	Ecliptic Latitude	float	deg
magBJ	B mag measure, GSC23 system	float	mag
▶magBJError	Error in B mag measure	float	mag
sourceMagBJ	source B mag	byte	
magRF	R mag measure, GSC23 system	float	mag
▶magRFError	Error in R mag measure	float	mag
sourceMagRF	source of R mag	byte	
magG	G mag estimate	float	mag
magGError	Error in G mag estimate	float	mag
sourceMagG	Source G mag	byte	
classification	Classification	boolean	
sourceClassification	source of Classification	byte	
toggleASC	Toggle for Attitude Star Catalog	boolean	
auxGSC23	Present in the GSC2.3 catalog	boolean	
auxSDSS	Present in the SDSS DR7 catalog	boolean	
auxUCAC	Present in the UCAC3 catalog	boolean	
auxLQRF	Present in the LQRF QSO aux catalog	boolean	
auxTYCHO	Present in the TYCHO2 catalog	boolean	
auxTMASS	Present in the Two MASS PSC catalog	boolean	
▶auxRadVel	A radial velocity estimate present	boolean	
▶auxParallax	A parallax estimate exists	boolean	mas

MDB/CU3/AuxData/IGSL/SourceCatalogIDs

Name	Description	Type	Units
solutionId	Solution Identifier	boolean	
sourceId	Gaia source id from IGSL2	long	
healpixId6	HEALPix identification level 6	int	
runningnumber	Running number in healpix 6	int	
idGSC23	Identifier in ref. catalogs	long	
idSDSS	Identifier in ref. catalogs	long	
idUCAC	Identifier in ref. catalogs	int	
idLQRF	Identifier in ref. catalogs	int	
idTYCHO	Identifier in ref. catalogs	long	
idTMASS	Identifier in ref. catalogs	long	

MDB/CU3/AuxData/IGSL/SourceCatalogReferences

Name	Description	Type	Units
solutionId	Solution Identifier	boolean	
refListID	Identifier in ref. list	byte	
refText	name/description of reference	string	

ADD

Parallax (value, err, source),

Aux, id: HIPPARCOS, PPMXL, SSS, OGLE, EPC

Not used: id/auxUCAC, auxParallax, auxRadVel “breaking” to drop

Requirements for the IGSL

To provide all sky positions, proper motions and magnitudes for all objects to a limit of $R_F = 21$ where possible, e.g. where the available large catalogs, e.g. >10000 square degrees, reach that limit. In particular the galactic plane is not currently complete beyond $R_F = 18$ in the large schmidt based catalogs that make the bulk of the faint IGSL input. The parameters: positions, proper motions and magnitudes, will be provided on a best effort basis, nominally with precisions of $0.3''$, 10 mas/yr and 0.3 magnitudes respectively, but obviously limited by the precision of the large catalogs. The CU3 QSO and Ecliptic Pole catalogs will be included to support directly the CU3 processes that require those resources.

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