# 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

  ?

# 2012 IGSL + ASC flag

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

MDB/CU3/AuxData/IGSL/IgslSource

| 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 Longditude | float | deg |
| galacticLat | Galactic Latitude | float | deg |
| eclipticLon | Ecliptic Longditude | 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 Atittude 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 esimate 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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