Sky Database (SDB) Text Header Quick Guide

Catalog data that is input as a text file for compilation to an SDB consists of an XML header followed by columnar-formatted data. The XML header defines the characteristics of the compiled catalog and the structure of the columnar data. That structure consists of the columnar format and SDB fields to be assigned to each column.

The header section looks something like the following (column definitions are for example purposes only)

```
<?xml version="1.0"?>
<!DOCTYPE TheSkyDatabase>
<TheSkyDatabaseHeader version="1.00">
   <identifier>Star Labels</identifier>
   <sdbDescription></sdbDescription>
   <searchPrefix></searchPrefix>
   <specialSDB>0</specialSDB>
   <plotObjects>0</plotObjects>
   <plotLabels>1</plotLabels>
   <plotOrder>0</plotOrder>
   <searchable>1</searchable>
   <clickIdentify>1</clickIdentify>
   <epoch>       2000.0</epoch>
   <referenceFrame>0</referenceFrame>
   <crossReferenceType>1</crossReferenceType>
   <defaultMaxFOV>      360.0000</defaultMaxFOV>
   <defaultObjectType index="0" description="Star"/>
   <raHours colBeg="44" colEnd="63"/>
   <decSign colBeg="17" colEnd="31"/>
   <decDegrees colBeg="64" colEnd="84"/>
   <decMinutes colBeg="17" colEnd="31"/>
   <decSeconds colBeg="17" colEnd="31"/>
   <positionAngle colBeg="16" colEnd="22"/>
   <minimumFOV colBeg="93" colEnd="102"/>
   <maximumFOV colBeg="103" colEnd="112"/>
   <userField fieldID="My Field 1" colBeg="11" colEnd="23"/>
   <sampleColumnHeader></sampleColumnHeader>
</TheSkyDatabaseHeader>
Arcalis    Gaia DR3 1236429004715336576        14.8897307690238   18.2354076392756   7.53   0.01    360.00
Axolotl    Gaia DR3 2340155679036275200        23.9982901550226   -22.4281156287336  8.09   0.01    360.00
Belenos    Gaia DR3 297045096447719040         1.42015357824506   28.5666952850285   6.99   0.01    360.00
Bibha      Gaia DR3 3823126385045210880        9.93497730647742   -3.80842385364296  8.59   0.01    360.00
```

XDocument Record

xDocument DOCTYPE = *TheSkyDatabase*

Root XElement = TheSkyDatabaseHeader w/ XAttribute *version="1.00"*

SDB Catalog Construction XML Records

The generic format for SDB predefined control XRecords without xAttributes is

<XElement>Value</XElement>

Where *XElement* is one of the preset names below.

XElement	SDB Field Name	Description	Format	Valid Values
identifier	Sky Database Identifier	Unique identifier for the database	String	
sdbDescription	SDB Description	Text description for the Sky Database	String	May be neutered HTML (i.e. parser will accept, but will not form hyperlink)
searchPrefix	Search Prefix	Text prefix that can be used to Find objects in SDB	String	Do not use "AAVSO" in this prefix.
defaultMinFOV	Minimum Field of View	The smallest field of view on the Sky Chart to show these objects.	Decimal	0 < 360
defaultMaxFOV	Maximum Field of View	The largest field of view on the Sky Chart to show these objects.	Decimal	0 < 360
referenceFrame	Coordinate Frame	The coordinate system of the objects in the source text file.	Integer	0 = Equatorial Coordinates are in RA/Dec (w/ equinox) format 1 = Horizon Coordinates are in azimuth and altitude format 2 = Topocentric Coordinates are relative to the observing site
epoch	Equinox	The equinox of the input coordinates.	Decimal	2000.0 or 1950.0
plotObjects	Plot Objects	Determines whether objects are plotted at coordinates	Integer	1 = Plot 0 = Don't plot objects
plotLabels	Plot Labels	Determines whether labels (if any) are plotted on star chart for the object	Integer	1= Plot labels 0 = Don't plot labels
plotOrder	Plot Order	Overlay order of these objects on the star chart	Integer	0 = Early: Stars will overlay objects in the database. 1 = Middle: Objects in the database will overlay stars. 2 = Late: Objects in the Sky Database on top of all other objects.
crossReferenceType	Cross Reference Type	Cross referencing method with respect to objects in the core databases	Integer	0 = None: No cross references to objects other databases. 1= Database: Cross references to objects in core databases or other SDBs. 2 = Pure: Cross reference existing object names or catalog numbers. 3 = Common: Cross reference existing common object names.
specialSDB	TBD	TBD	TBD	TBD
searchable	Searchable	Determines whether a user can search for the object	Integer	1 = Can search 0 = Can't search
clickIdentify	Click Identify	Determines whether clicking on the object will pop up information	Integer	1 = Can click identify 0 = Can't click identify
raMultiplier	RA Multiplier	Value to multiply RA field to produce RA in hours	Decimal	Default = 1.0
decMultiplier	Dec Multiplier	Value to multiply Dec field to produce Dec in degrees.	Decimal	Default = 1.0
magMultiplier	Mag Multiplier	Value to multiply Magnitude field to produce magnitude	Decimal	Default = 1.0
majorAxisMultiplier	Major Axis Multiplier	Value to multiply Major Axis field to produce Major Axis in arc seconds.	Decimal	Default = 1.0
minorAxisMultiplier	Minor Axis Multiplier	Value to multiply Minor Axis field to produce Minor Axis in arc seconds	Decimal	Default = 1.0
posAngleMultiplier	Position Angle Multiplier	Value to multiply PA field to produce PA in degrees	Decimal	Default = 1.0

The generic XElement format for SDB predefined field names with XAttributes is

<*XElement XAttribute* = Value *XAttribute* = Value/>

Where *XElement* and associated *XAttributes* are defined below.

XElement	SDB Field	Description	XAttributes	Format	Valid Values
defaultObjectType	Default Object Type	Type of object from fixed list	index	Integer	See Object Type list below
			description	String	See Object Type list below

Text Table Format XRecords

SDB Defined Field Names with column definition XAttributes

The generic format for SDB predefined field name records is

<*XElement colBeg*=”Value” *colEnd*="Value"/>

Where *XElement* is one of the preset names below.
colBeg XAttribute is the one-based text column for the first character of the data.
colEnd XAttribute is the one-based text column for the last character of the data.

SDB Defined Fields

XElement	SDB Field	Format	Valid Values
raHours	RA hours	Decimal	0 < 24
raMinutes	RA Minutes	Decimal	0 < 360
raSeconds	RA Seconds	Decimal	0 < 60
decSign	Dec sign	Char	“+” or “-“
decDegrees	Dec degrees	Decimal	0 < 60
decMinutes	Dec minutes	Decimal	0 < 60
decSeconds	Dec seconds	Decimal	0 < 60
paHours	Position Angle in hours	Decimal	0 < 360
magnitude	Magnitude	Decimal	(-)x.x
crossreference	Cross reference flag	Integer	0 or 1
toggleGroup	Group Number	TBD	TBD
labelOrSearch	Search switch	Integer	0 or 1
objectType	Object Type index	Integer	0 to 127
majorAxis	Long axis of object in arc sec	Decimal	x.x
minorAxis	Short axis of object in arc sec	Decimal	x.x
drawCommand	Draw Command	TBD	TBD
minimumFOV	Minimum field of view (degrees) to display object.	Decimal	x.x (default 0.0)
maximumFOV	Maximum field of view (degrees) to display object.	Decimal	x.x (default 360.0)
scale	Scale	Decimal	TBD
fileName	File Name	String	TBD

The generic format for SDB custom field name XRecords is

<*userField fieldID*=Value *colBeg*=Value *colEnd*=Value/>

Where *Field* and associated *XAttributes* are defined below.

XElement	SDB Field	Description	XAttributes	Format	Valid Values
userField	Field Id	User defined field	fieldID	String	User defined
			colBeg	Integer	1 > size of text line
			colEnd	Integer	colBeg > size of text line

Object Type Description	Index
Star	0
Variable Star	1
Suspected Variable	2
Double Star	3
Galaxy	4
Type C Galaxy	5
Elliptical Galaxy	6
Lenticular Galaxy	7
Spiral Galaxy	8
Irregular Galaxy	9
Cluster of Galaxies	10
Open Cluster	11
Globular Cluster	12
Cluster Nebulosity	13
Nebula	14
aright Nebula	15
Dark Nebula	16
Planetary Nebula	17
NGC Probable star	18
other NGC	19
Mixed Deep Sky	20
Nonstellar GSC	21
Quasar	22
X-Ray Source	23
Radio Source	24
Sun	25
Mercury	26
Venus	27
Earth	28
Mars	29
Jupiter	30
Saturn	31
Uranus	32
Neptune	33
Pluto	34
Moon	35
Comet	36
Asteroid (Small Database)	37
Asterism	38
Asteroid (Large Database)	39
Satellite	40
Photo	41
Video	42
Sound	43
Notes	44
Constellation Figure	45
Constellation Boundary	46
Ecliptic	47
Horizon Grid	48
Horizon	49
Meridian	50
Equatorial Grid	51
Galactic Equator	52
Milky Way	53
Reference Line	54
Reference Point	55
Field of View Indicator	56
Sky Chart	57
Chart Legend	58
Telescope Limit	59
Supernova	60
Celestial North Arrow	61
Mosaic Grid	62
Zoom Box	63
Constellation Drawing	64
Arrow	65
Area of Interest	66
Chart Scale	67
Calendar	68
Telrad	69
Tour Title	70
Meteor Shower Radiants	71
Ellipse	72
Graphic	73
Constellation Labels	74
Pointing Sample	75
Telescope Crosshairs	76
Target Object	77
Pointing Target	78
Dome Slit	79
FOV Indicators	80
Iridium Flares	81
Polar Scope	82
Orchestrate	83
Telescope east limit	84
Telescope west limit	85
NEXT reserved	86
Reserved 12	87
Reserved 13	88
Reserved 14	89

Object Type Description	Index	Object Type Description	Index	Object Type Description	Index
Reserved 15	90	Reserved 28	103	Type 9	116
Reserved 16	91	Reserved 29	104	Type 10	117
Reserved 17	92	Reserved 30	105	Type 11	118
Reserved 18	93	Reserved 31	106	Type 12	119
Reserved 19	94	Reserved 32	107	Type 13	120
Reserved 20	95	Type I	108	Type 14	121
Reserved 21	96	Type 2	109	Type 15	122
Reserved 22	97	Type 3	110	Type 16	123
Reserved 23	98	Type 4	111	Type 17	124
Reserved 24	99	Type 5	112	Type 18	125
Reserved 25	100	Type 6	113	Type 19	126
Reserved 26	101	Type 7	114	Type 20	127
Reserved 27	102	Type 8	115		

Catalog Type	Location	Extension
1. Core Databases	C:\Program Files (x86)\Software Bisque\TheSkyX Professional Edition\Resources\Common\Core Databases	.idx or .plt
2. Sky Database.Optional SDBX	C:\Program Files (x86)\Software Bisque\TheSkyX Professional Edition\Resources\Serious\Optional SDBs	.SBDX
3. Sky Database.Core SDBX	C:\Program Files (x86)\Software Bisque\TheSkyX Professional Edition\Resources\Common\Core SDBs	.SBDX
4. Sky Database.My Sky Databases	C:\Users\rick-\Documents\Software Bisque\TheSky Professional Edition 64\SDBs (or other user defined)	.SBDX