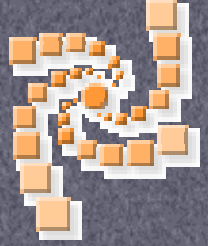

LibVOTable

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Outlines

- VOTable parser
- C library
- GPL
- Large file parsing
- Not up to date
- Others Terapix products

C Library

- Based on libxml2
- Used by Skywatcher
  - 13000 Fits files * 36 headers per Fits * 4 points
- Easy to use : votable.h
- Functions :
  - Memory
  - Extraction
  - Position

Functions (1)

Memory

- Init_VO_Parser
  - Init structure, create xmlTextReader pointer
- Free_VO_Parser
  - Free structure and xmlTextReader

Functions (2)

Extraction

- Extract_VO_Fields
  - Extract FIELD attribute
- Extract_VO_TableData
  - Extract TD tag attributes and values
- Extract_Att_VO_Table
  - Extract TABLE attributes

Functions (3)

Position

- Move_to_Next_VO_Fields
  - Move to the next FIELD in the next TABLE
- Move_to_Next_VO_Table
  - Move to the next TABLE

VOTable parsing

```
<?xml version="1.0"?>
<VOTABLE version="1.1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:noNamespaceSchemaLocation="http://www.ivoa.net/xml/VOTable/VOTable/v1.1">
  <DESCRIPTION>Data to import to skywatcher</DESCRIPTION>
  <RESOURCE>
    <PARAM name="Instrument" datatype="char" arraysize="*" value="TOTO">
      <DESCRIPTION>
        This parameter is designed to store intrument's name
      </DESCRIPTION>
    </PARAM>
    <TABLE name="SpectroLog">
      <FIELD name="Target" ucd="meta.id" datatype="char" arraysize="30*"/>
      <FIELD name="Instr" ucd="instr.setup" datatype="char" arraysize="5*"/>
      <FIELD name="Dur" ucd="time.expo" datatype="int" width="5" unit="s"/>
      <FIELD name="Spectrum" ucd="meta.ref.url" datatype="float" arraysize="*"
             unit="mW/m2/nm" type="location">
        <DESCRIPTION>Spectrum absolutely calibrated</DESCRIPTION>
        <LINK type="location"
              href="http://ivoa.spectr/server?obsno="/>
      </FIELD>
      <DATA><TABLEDATA>
        <TR><TD>NGC6543</TD><TD>SWS06</TD><TD>2028</TD><TD>01301903</TD></TR>
        <TR><TD>NGC6543</TD><TD>SWS07</TD><TD>2544</TD><TD>01302004</TD></TR>
      </TABLEDATA></DATA>
    </TABLE>
  </RESOURCE>
</VOTABLE>
```

```c
#include "votable.h"

int main() {
  xmlTextReaderPtr reader;
  list_field *vfield_move;
  list_tabledata *vtabledata_move;
  VOTable votable;
  int nbFields;
  int *columns;
  char file[50]="votable.xml";
  reader = Init_VO_Parser(file,&votable);

  Extract_Att_VO_Table(reader,&votable);
  printf("Table Attribute=%s\n\n",votable.table->name);

  Extract_VO_Fields(reader,&votable,&nbFields,&columns);
  for(vfield_move=votable.field;vfield_move!=NULL;vfield_move=vfield_move->next) {
    printf("name=%s\nucd=%s\ndatatype=%s\narraysize=%s\ntype=%s\nwidth=%s\nunit=%s\n\n",
           vfield_move->name,
           vfield_move->ucd,
           vfield_move->datatype,
           vfield_move->arraysize,
           vfield_move->type,
           vfield_move->width,
           vfield_move->unit);
    if(xmlStrcmp(vfield_move->ucd,"meta.id") == 0)
      columns[0] = vfield_move->position;
    if(xmlStrcmp(vfield_move->ucd,"meta.ref.url") == 0)
      columns[1] = vfield_move->position;
 }


 Extract_VO_TableData(reader,&votable, nbFields, columns);
 for(vtabledata_move=votable.tabledata;vtabledata_move!=NULL;vtabledata_move=vtabledata_move->next) {
   printf("All values=%s\n",vtabledata_move->value);
   if (vtabledata_move->colomn == columns[0])
     printf("ucd=meta.id value=%s\n",vtabledata_move->value);
   if (vtabledata_move->colomn == columns[1])
     printf("ucd=meta.ref.url value=%s\n",vtabledata_move->value);
 }

  if (Free_VO_Parser(reader,&votable,&columns) == 1)
    fprintf(stderr,"memory problem\n");
  return 0;
}
```

Package

- Developpements ended beginning 2005
  - Need update !
- Autoconf/Automake tools
- GPL
- RPM / Tarball
- http://terapix.iap.fr/rubrique.php?id_rubrique=179

Others products

- Skywatcher
  - Display sky map
  - Read votable
- Bertin's tool
  - Scamp : astrometric tool
  - Sextractor : source extraction tool
  - Swarp : images coaddition + resampling tool
- VOTable survey pipeline .. (looking for Perl parser !)


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