conesearch	tool for VO conesearch queries
cscatalog	tool for VO conesearch queries

1.1.1 conesearch - Tool

Package vo
Module conesearch

tool for VO conesearch queries

Description

conesearch is an tool that processes queries to VO conesearch services.
A conesearch tool connects to the registry of conesearch services and downloads the definition of services available. The user may then query one of these services and capture the output.

```
> cs:=conesearch()
Getting registry of VO cone services
Web request will be sent to http://voservices.org/cone/show/getprofile.asp?format=xml
Received answer in 1.07959199 seconds
Start parsing VOTable
Successfully parsed VOTable
Successfully read registry of conesearch services
>
> cs.list()
Service 1: Messier
Service 2: GSC221
Service 3: HIP
Service 4: GSC1
Service 5: TYC
Service 6: NCSA Astronomy Digital Image Library
Service 7: Yale
Service 8: DPOSS Plates
Service 9: ASCA Master Observations
Service 10: XTE Master Observations
Service 11: OSSE Observations
Service 12: DPOSS
Service 13: SDSS.EDR.PhotoObj
Service 14: USNO-A2.0
Service 15: USNO-SA2.0
Service 16: Landolt 1992
Service 17: Landolt 1983
Service 18: VizieR on GSC2
Service 19: VizieR
```

```
Service 20: VizieR
Service 21: VizieR
Service 22: VizieR
Service 23: VizieR
Service 24: VizieR
Service 25: 2MASS Second Incremental Release Point Source Catalog (PSC)
Service 26: 2MASS Second Incremental Release Extended Source Catalog (XSC)
Service 27: 2MASS Second Incremental Release PSC Joined with XSC
Service 28: 2MASS Second Incremental Release Survey Scan Info
Service 29: 2MASS Second Incremental Release PSC Joined with Scan Data
Service 30: 2MASS Second Incremental Release XSC Joined with Scan Data
Service 31: 2MASS First Incremental Release Point Source Catalog (PSC)
Service 32: 2MASS First Incremental Release PSC Joined with XSC
Service 33: 2MASS First Incremental Release Survey Scan Info
Service 34: 2MASS First Incremental Release PSC Joined with Scan Data
Service 35: 2MASS First Incremental Release XSC Joined with Scan Data
Service 36: 2MASS Sampler Point Source Catalog (PSC)
Service 37: 2MASS Sampler Extended Source Catalog (PSC)
Service 38: 2MASS Sampler PSC Joined with XSC
Service 39: IRAS Faint Source Catalog v2.0
Service 40: IRAS Point Source Catalog v2.0
Service 41: IRAS Catalog of Galaxies and Quasars
Service 42: IRAS Serendipitous Survey Catalog
Service 43: IRAS Small Scale Structure Catalog
Service 44: IRAS Additional Observations Catalog
Service 45: IRAS Additional Observations Catalog
Service 46: IRAS Faint Source Catalog Rejects
Service 47: IRAS Point Source Catalog Rejects
Service 48: IRAS PSC Joined with the WSDB
Service 49: IRAS PSC Joined with HCON and WSDB
Service 50: USNOA-2
Service 51: &lt;a href=http://www.cv.nrao.edu/nvss/&gt;NVSS&lt;/a&gt;
Service 52: &lt;a href=http://sundog.stsci.edu/first/top.html&gt;FIRST&lt;/a&gt;
Service 53: The Midcourse Space Experiment (MSX)
Service 54: ROSAT All Sky Sources
Service 55: ROSAT Bright Sources
Service 56: ROSAT Faint Sources
> cs.info(40)
ResponsibleParty: &lt;a href=mailto:jcg@ipac.caltech.edu&gt;John Good&lt;/a&gt;
BaseURL:http://irsatest.ipac.caltech.edu:8001/cgi-bin/Oasis/CatSearch/nph-catsearch?
CAT=iras:iraspsc&amp;
ServiceName: IRAS Point Source Catalog v2.0
Waveband: infrared
Instrument: &lt;a href=http://www.ipac.caltech.edu/ipac/iras/iras.html&gt;IRAS&lt;/a&gt;
MaxSR: 0
MaxRecords: 100000
```

```
Verbosity: false
Epoch: 2000
Coverage: All-sky
_name: Row
> cs.query(40, 200, 45, 1)
Web request will be sent to "http://irsatest.ipac.caltech.edu:8001/cgi-bin/Oasis/CatSe
nph-catsearch?CAT=iras:iraspsc&RA=200&DEC=45&SR=1"
Received answer in 4.42842793 seconds
Start parsing VOTable
Successfully parsed VOTable
05-Jan-2003/11:27:04 NORMAL [_proc=xml version="1.0",
_doctype=[root=VOTABLE, public=,
system=http://us-vo.org/xml/VOTable.dtd],
VOTABLE=[DEFINITIONS=[COOSYS=[=]], RESOURCE=[TABLE=[FIELD=[=],
FIELD_1=[=], FIELD_2=[=], FIELD_3=[=], FIELD_4=[=], FIELD_5=[=],
FIELD_6=[=], FIELD_7=[=], FIELD_8=[=], FIELD_9=[=], FIELD_10=[=],
FIELD_11=[=], FIELD_12=[=], FIELD_13=[=], FIELD_14=[=], FIELD_15=[=],
FIELD_16=[=], FIELD_17=[=], FIELD_18=[=], FIELD_19=[=], FIELD_20=[=],
FIELD_21=[=], FIELD_22=[=], FIELD_23=[=], FIELD_24=[=], FIELD_25=[=],
FIELD_26=[=], FIELD_27=[=], FIELD_28=[=], FIELD_29=[=], FIELD_30=[=],
FIELD_31=[=], FIELD_32=[=], FIELD_33=[=], FIELD_34=[=], FIELD_35=[=],
FIELD_36=[=], FIELD_37=[=], FIELD_38=[=], FIELD_39=[=], FIELD_40=[=],
FIELD_41=[=], FIELD_42=[=], FIELD_43=[=], FIELD_44=[=], FIELD_45=[=],
FIELD_46=[=], FIELD_47=[=], FIELD_48=[=], FIELD_49=[=], FIELD_50=[=],
FIELD_51=[=], FIELD_52=[=], FIELD_53=[=], FIELD_54=[=], FIELD_55=[=],
FIELD_56=[=], FIELD_57=[=], FIELD_58=[=], FIELD_59=[=], FIELD_60=[=],
FIELD_61=[=], FIELD_62=[=], FIELD_63=[=], FIELD_64=[=], FIELD_65=[=],
FIELD_66=[=], FIELD_67=[=], FIELD_68=[=], FIELD_69=[=], FIELD_70=[=],
FIELD_71=[=], FIELD_72=[=], FIELD_73=[=], FIELD_74=[=], FIELD_75=[=],
FIELD_76=[=], FIELD_77=[=], FIELD_78=[=], FIELD_79=[=], FIELD_80=[=],
FIELD_81=[=], FIELD_82=[=], DATA=[TABLEDATA=[TR=[TD=13178+4601,
TD_1=13, TD_2=17, TD_3=53.3, TD_4=+, TD_5=46, TD_6=1, TD_7=42,
TD_8=73, TD_9=38, TD_10=124, TD_11=2, TD_12=0.250, TD_13=0.684,
TD_14=0.400, TD_15=1.204, TD_16=1, TD_17=1, TD_18=1, TD_19=3, TD_20=0,
TD_21=null, TD_22=0, TD_23=0, TD_24=0, TD_25=11, TD_26=0, TD_27=0,
TD_28=0, TD_29=60, TD_30=null, TD_31=L, TD_32=null, TD_33=F,
TD_34=nul, TD_35=2, TD_36=0, TD_37=0, TD_38=0, TD_39=0, TD_40=0,
TD_41=1, TD_42=2, TD_43=0, TD_44=0, TD_45=0, TD_46=0, TD_47=0,
TD_48=2, TD_49=3, TD_50=9, TD_51=0, TD_52=0, TD_53=2, TD_54=1000,
TD_55=1000, TD_56=1000, TD_57=1000, TD_58=null, TD_59=null,
TD_60=null, TD_61=null, TD_62=0.3322, TD_63=-1.00, TD_64=107.8316,
TD_65=70.5135, TD_66=174.2548, TD_67=48.7945, TD_68=200.0157,
TD_69=45.7664, TD_70=132003.8, TD_71=+454559, TD_72=199.4721,
TD_73=46.0283, TD_74=131753.3, TD_75=+460142, TD_76=97094,
TD_77=-0.6554507488515816, TD_78=-0.2387681951535420,
TD_79=0.7165012664420217, TD_80=213031130, TD_81=213031130, TD_82=1],
```

TR_1=[TD=13144+4508, TD_1=13, TD_2=14, TD_3=27.9, TD_4=+, TD_5=45,
TD_6=8, TD_7=22, TD_8=43, TD_9=10, TD_10=124, TD_11=2, TD_12=0.255,
TD_13=0.492, TD_14=0.721, TD_15=1.467, TD_16=1, TD_17=3, TD_18=3,
TD_19=1, TD_20=0, TD_21=null, TD_22=0, TD_23=10, TD_24=12, TD_25=0,
TD_26=0, TD_27=90, TD_28=53, TD_29=55, TD_30=G, TD_31=A, TD_32=A,
TD_33=E, TD_34=nul, TD_35=0, TD_36=0, TD_37=0, TD_38=0, TD_39=0,
TD_40=0, TD_41=0, TD_42=0, TD_43=0, TD_44=0, TD_45=0, TD_46=0,
TD_47=0, TD_48=0, TD_49=4, TD_50=9, TD_51=0, TD_52=0, TD_53=2,
TD_54=1000, TD_55=1000, TD_56=1000, TD_57=1000, TD_58=0.5181,
TD_59=-1.00, TD_60=0.6830, TD_61=15.62, TD_62=0.4914, TD_63=-2.00,
TD_64=108.6928, TD_65=71.5482, TD_66=174.2665, TD_67=47.7227,
TD_68=199.1668, TD_69=44.8761, TD_70=131640.0, TD_71=+445234,
TD_72=198.6163, TD_73=45.1394, TD_74=131427.9, TD_75=+450822,
TD_76=96685, TD_77=-0.6693523691696847, TD_78=-0.2326578735244160,
TD_79=0.7055761615687050, TD_80=213031132, TD_81=213031132, TD_82=1],
TR_2=[TD=13172+4547, TD_1=13, TD_2=17, TD_3=17.1, TD_4=+, TD_5=45,
TD_6=47, TD_7=20, TD_8=22, TD_9=5, TD_10=125, TD_11=2, TD_12=132.200,
TD_13=64.050, TD_14=5.521, TD_15=1.433, TD_16=3, TD_17=3, TD_18=3,
TD_19=2, TD_20=2, TD_21=29, TD_22=11, TD_23=5, TD_24=10, TD_25=12,
TD_26=15995, TD_27=10134, TD_28=492, TD_29=36, TD_30=A, TD_31=A,
TD_32=A, TD_33=B, TD_34=19, TD_35=0, TD_36=0, TD_37=0, TD_38=0,
TD_39=0, TD_40=0, TD_41=0, TD_42=0, TD_43=0, TD_44=0, TD_45=0,
TD_46=0, TD_47=0, TD_48=2, TD_49=5, TD_50=10, TD_51=5, TD_52=4,
TD_53=2, TD_54=1000, TD_55=1000, TD_56=1000, TD_57=1000, TD_58=2.0640,
TD_59=12.08, TD_60=11.6012, TD_61=11.18, TD_62=3.8528, TD_63=15.62,
TD_64=107.8894, TD_65=70.7742, TD_66=174.3300, TD_67=48.5379,
TD_68=199.8664, TD_69=45.5267, TD_70=131927.9, TD_71=+453136,
TD_72=199.3212, TD_73=45.7889, TD_74=131717.1, TD_75=+454720,
TD_76=97031, TD_77=-0.6588840449144233, TD_78=-0.2380756877363054,
TD_79=0.7135767528907409, TD_80=213031133, TD_81=213031133,
TD_82=1]]]]]]]

The final output in this example is the VOTable in the form of a Glish record. The FIELD information is available from the attributes of the corresponding records, and the DATA can be retrieved directly. However this is tedious and not for the faint-of-heart. We are currently writing a conversion tool that will translate VOTables directly into AIPS++ tables. For the moment, most of the interesting astronomical use of the conesearch will come via the cscatalog tool.

Constructors

conesearch	Construct an conesearch tool

Functions

done	Terminate the tool
info	Print information about a particular conesearch service

list	List all registered conesearches
query	Query a conesearch

conesearch - Constructor

Package	**vo**
Module	**conesearch**
Tool	**conesearch**

Construct an conesearch tool

Synopsis
conesearch()

Description
This is used to construct `conesearch` tools.
This returns a Glish variable containing the tool functions of conesearch.

Returns
conesearch tool

Example

```
cs:=conesearch();
cs.list()
rec:=cs.query(1, 200, 45, 10)
cs.done()
```

---

conesearch.list - Function

Package	**vo**
Module	**conesearch**
Tool	**conesearch**

List all registered conesearches

Synopsis

list()

Description
This queries the registry to find all registered conesearches.

Arguments

Returns
Bool

Example

```
cs:=conesearch();
cs.list()
rec:=cs.query(1, 200, 45, 10)
cs.done()
```

---

conesearch.info - Function

Package	**vo**
Module	**conesearch**
Tool	**conesearch**

Print information about a particular conesearch service

Synopsis
info()

Description
This queries the registry to find information about a particular conesearch service.

Arguments

Returns
Bool

Example

```
cs:=conesearch();
cs.list()
cs.info(14);
cs.done()
```

---

conesearch.query - Function

Package	**vo**
Module	**conesearch**
Tool	**conesearch**

Query a conesearch

Synopsis
query(i, ra, dec, sr, url)

Description
This queries a specific conesearch. The VOTable is returned as a record parsed by the gxmlparser tool.

The service is denoted by an integer - the index of the service in the list.

To facilitate testing of non-registered services, the query also accepts a URL. This must be the same URL as expected by the conesearch registry. For example for the NVSS conesearch being developed at the NRAO, this would be

```
http://www.aoc.nrao.edu/e2e/java/NVSSConeSearchServlet?
```

Arguments

i	Service to be queried Allowed:Integer Default: 1
ra	Right ascension (degrees) Allowed:Double Default: 200.0
dec	Declination (degrees) Allowed:Double Default: 45.0
sr	Search radius (degrees) Allowed:Float Default: 10
url	Alternative to service: URL to query Allowed:String Default: F

Returns
votable in record

Example

```
cs:=conesearch();
cs.list()
rec:=cs.query(14, 180, 45, 1)
cs.done()
```

---

conesearch.done - Function

Package	**vo**
Module	**conesearch**
Tool	**conesearch**

Terminate the tool

Synopsis
done()

Description
This is used to delete the tool.