

# Binding Applications with Plastic

John Taylor (WFAU/AstroGrid)

Thomas Boch (CDS)

Marco Comparato (INAF)

Mark Taylor (Bristol)

Noel Winstanley (Jodrell/AstroGrid)

Bob Mann (WFAU/AstroGrid)

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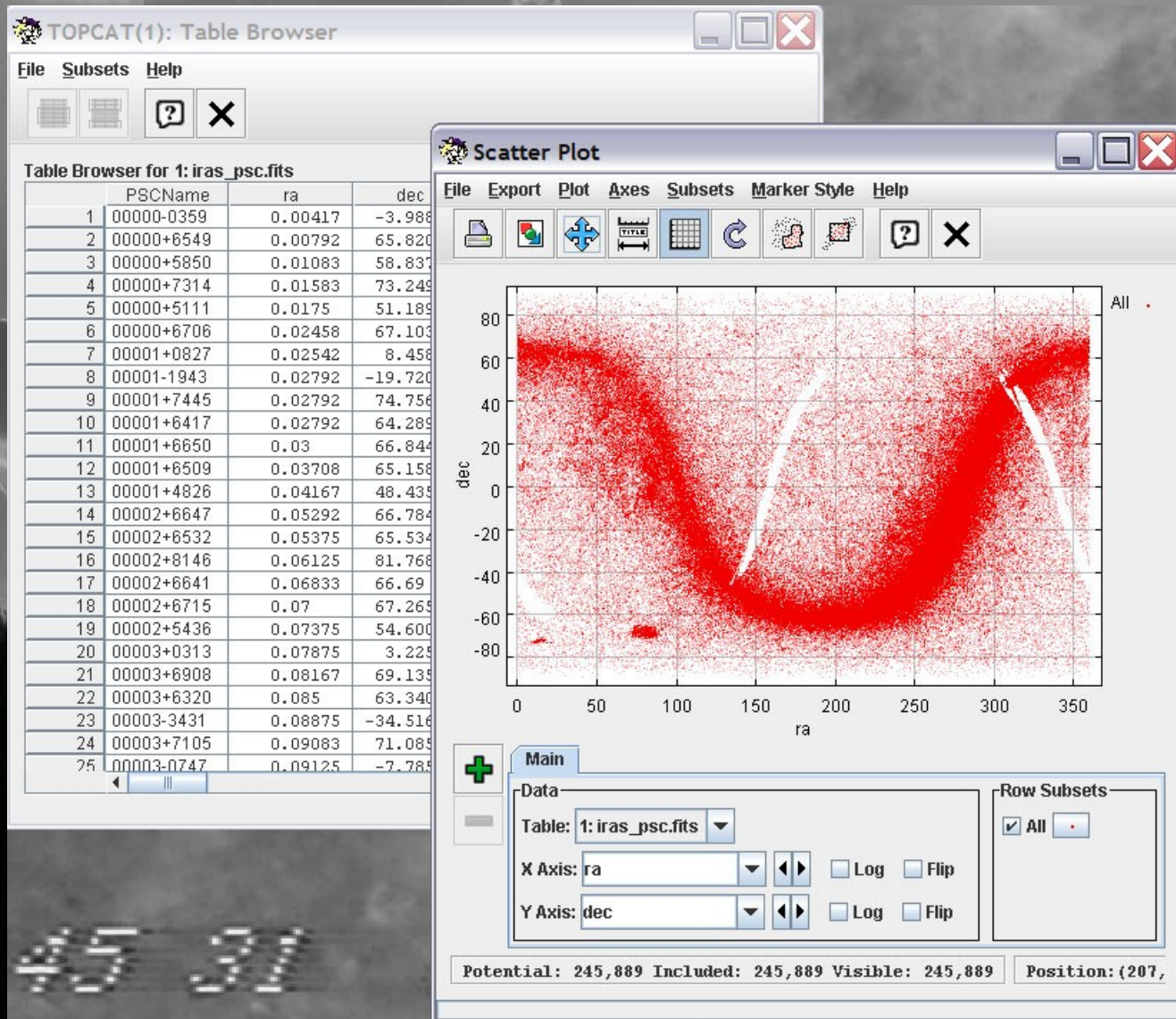
# Plastic Soundbite

Plastic is a protocol that allows heterogeneous desktop applications to talk to each other

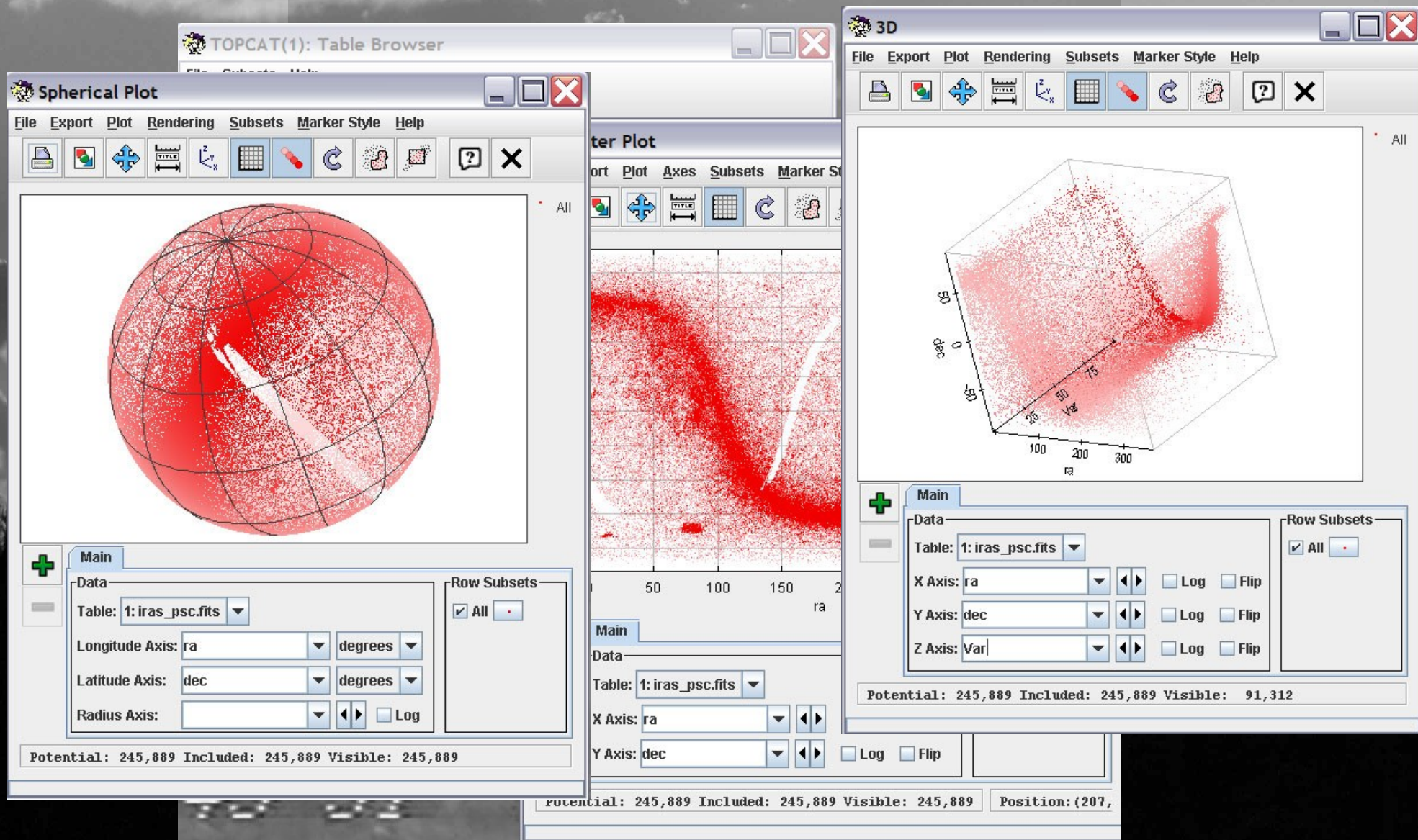




# Setting the scene...



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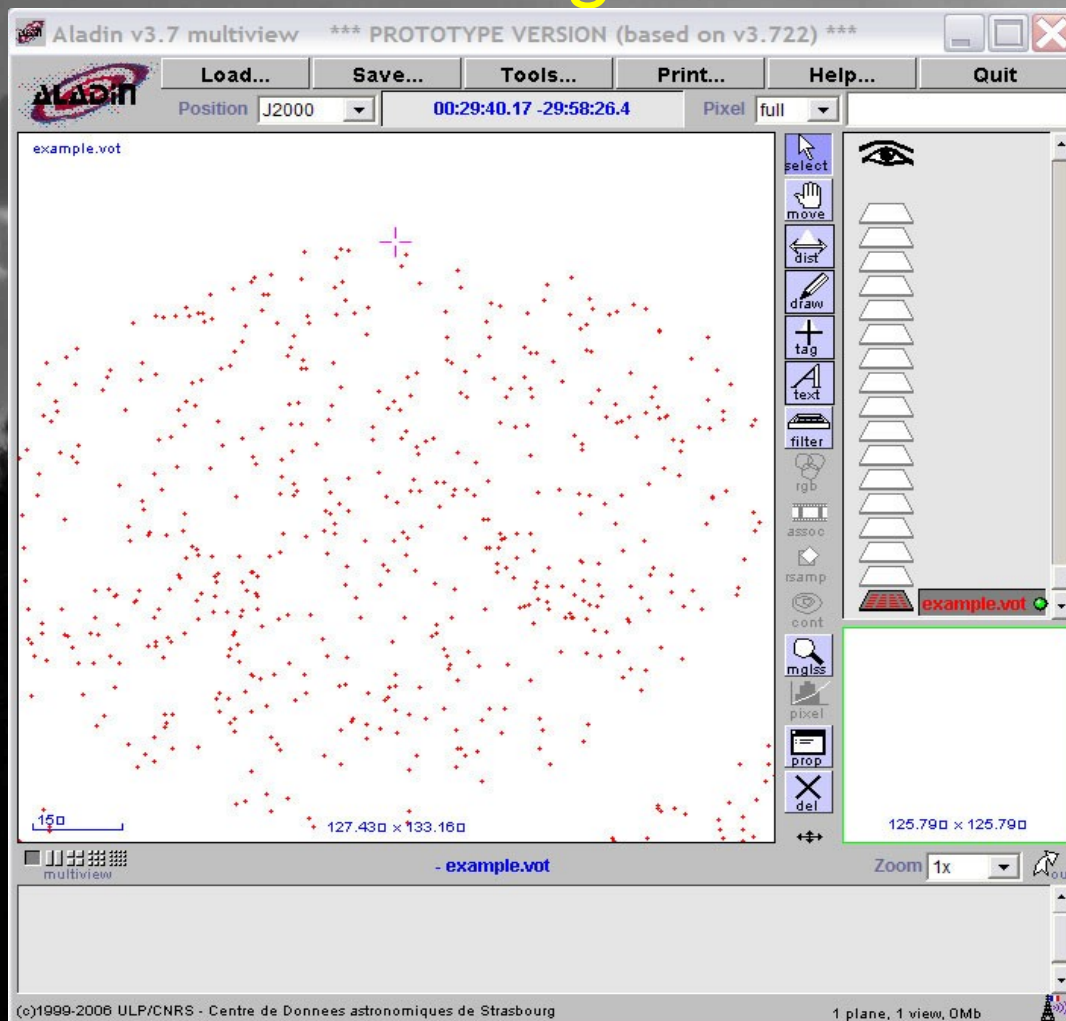
# Issues

- Increasing complexity of software
- Resource footprint for all the features you're not using
- Duplication of effort
- Inferior implementation
- Every application can't contain every other one!



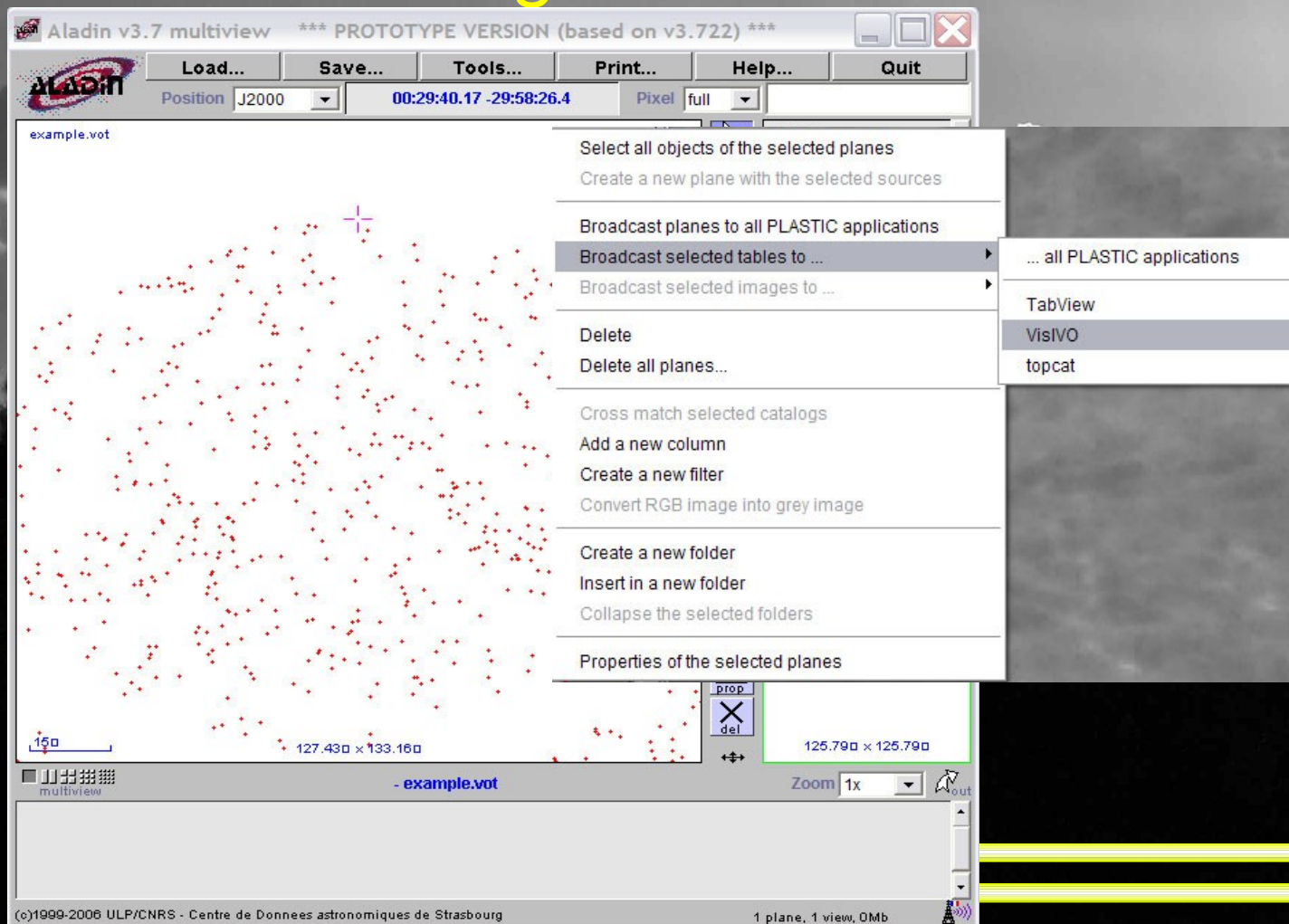
# An alternative approach

- A suite of cooperating programs...each of which does one thing well.



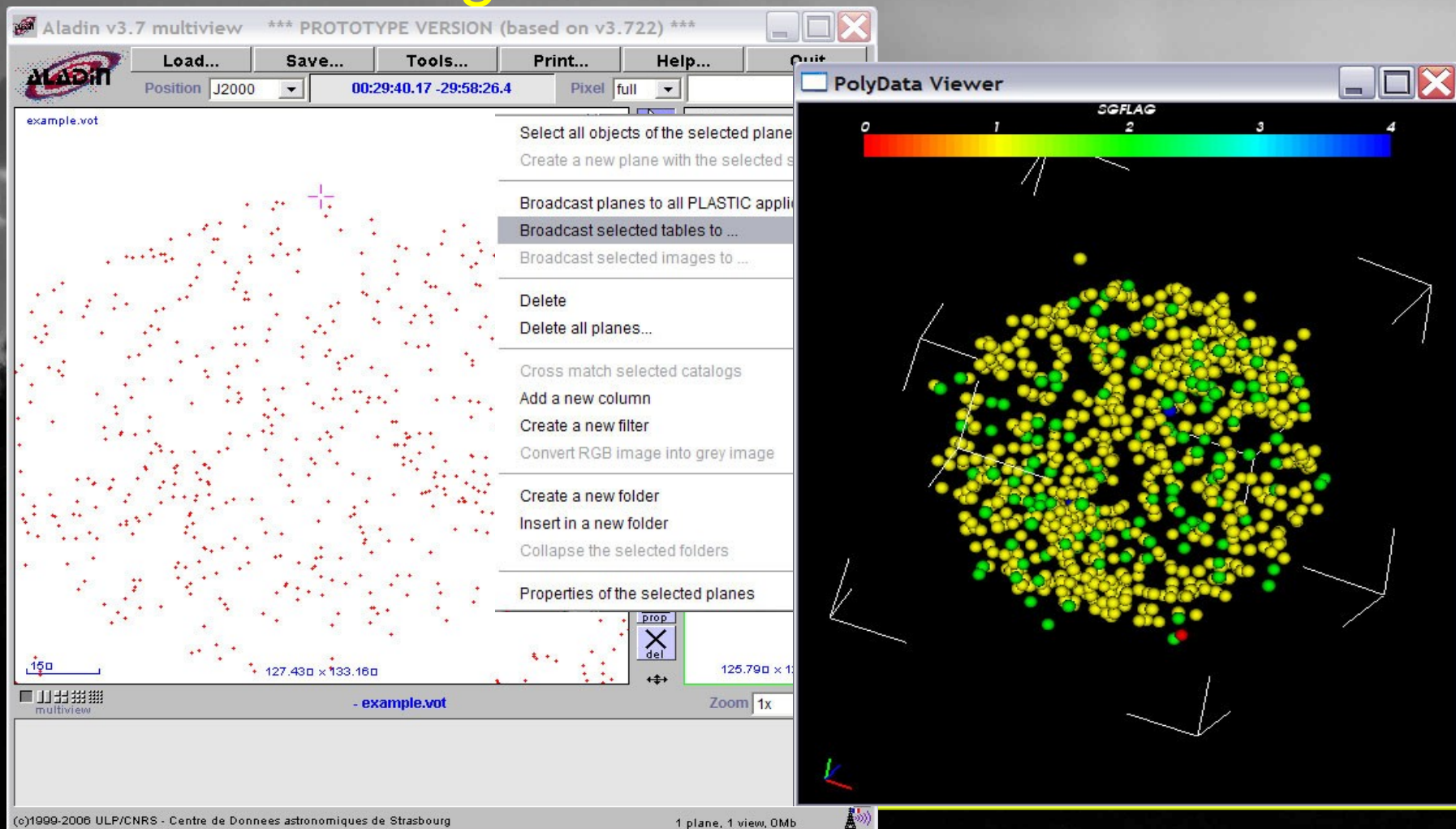
# An alternative approach

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- A suite of cooperating programs...each of which does one thing well.





# Another example

xmdv\_light-vo

File PLASTIC

- Send VOTable
- Send selected rows
- About

All

VisIVO

TabView

topcat

Aladin

TabView

Overwrite existing tab

Create new tab

RMAG SGFLAG VEL VEL\_ER GAL\_LO GAL\_LA EXTINC B-R

20.02 4.0 187391 390.0 359.56 60.793 3.3 4.9800

TabView: Loaded table.

File Edit Interop

file...c42966.vot file...055156.xml

file:C:/DOCUME~1/jdt/LOCALS~1/Temp/plastic42966.vot

R...	D...	TA...	RA...	DECRA...	DE...	BM...	RM...	SG...	gal...	star	VEL	VE...	GA...	GA...	EX...	B-R
0...	-5...	g0...	00...	-5...	0...	-5...	17...	16...	1	<input checked="" type="checkbox"/>	25...	100	31...	-6...	0.04	0...
0...	-8...	g0...	00...	-8...	0...	-8...	16...	16...	1	<input checked="" type="checkbox"/>	0	0	30...	-3...	0.51	0...

849 rows X 18 cols

0.2634 -89.12 0.2634 -89.12 7.96 7.22 0.0 -8978. 0.0 0.1104 -87.78 0.02 -5.560

RA2000 = 372.08298

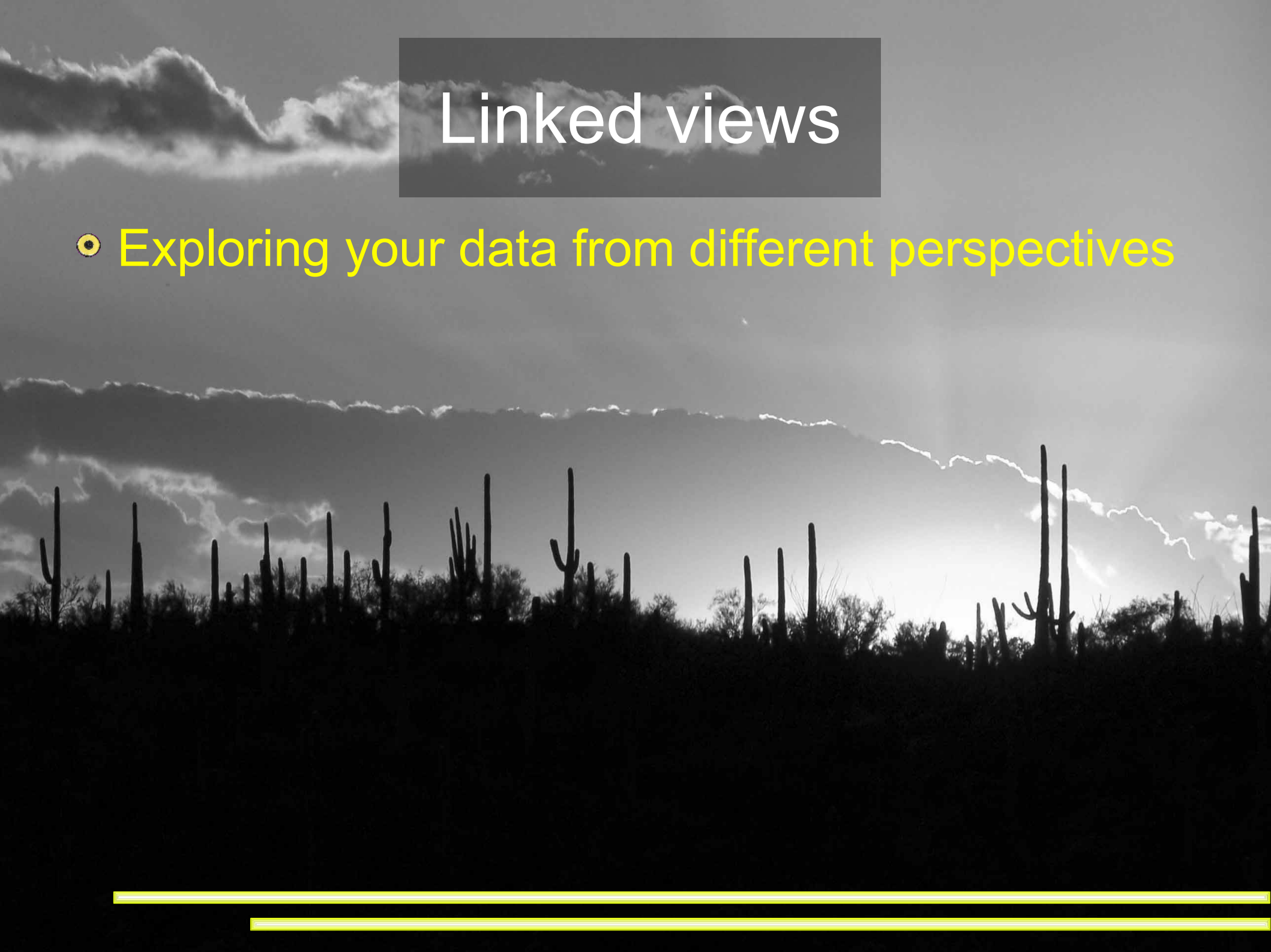
# Technical details

- Plastic is a **simple** messaging system
    - No security, encryption, guaranteed delivery, transactions etc
  - Extensible via new messages
  - Publish-Subscribe architecture: “**Plastic Hub**”
  - Platform and language independent
  - Communication over xml-rpc or JavaRMI
    - More added if there's demand
  - Based on the technologies in the AstroRuntime
- 
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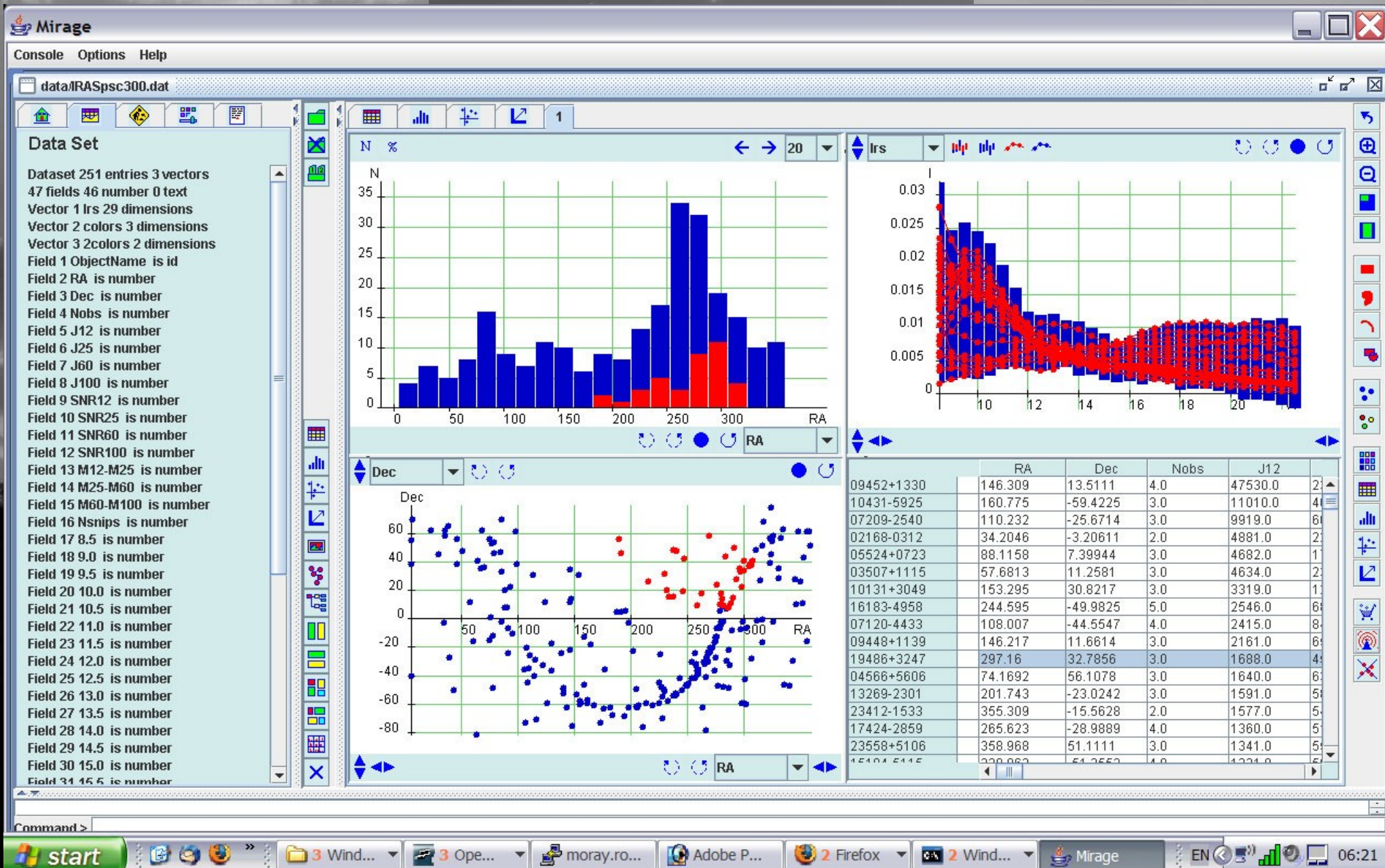


# Linked views

- Exploring your data from different perspectives

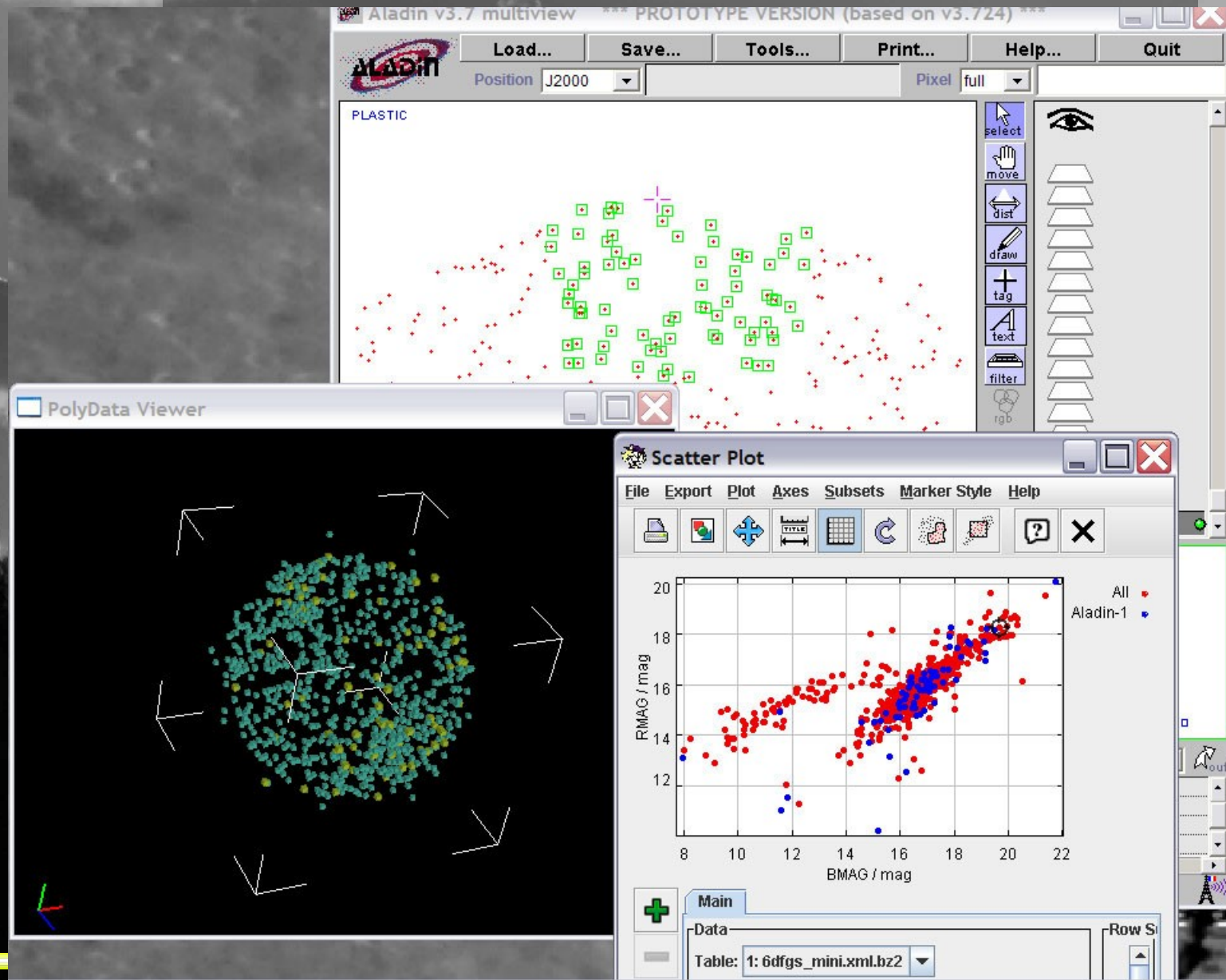


# Linked views





# Linked views via Plastic



# It's not just for visualisation apps...

- AstroScope
- Web pages such as DataScope
- Scripting environments
- VOSpace
- Datamining applications





# It's not just for visualisation apps...

The screenshot displays the AstroScope application window. The interface is divided into several sections:

- File History**: Located at the top left, with a 'Help' button at the top right.
- 1. Search**: Contains input fields for 'Position or Object Name' (0.000000,0.000000) and 'Search Radius (deg)' (0.100000). It includes radio buttons for 'Degrees' (selected) and 'Sexagesimal', and checkboxes for 'Images', 'Spectra', and 'Catalogues'. A 'Search' button is at the bottom.
- 2. Navigate**: Includes a 'Go To Top' button and a 'Clear selection' button.
- 3. Process**: Features a 'View tables in VisIVO' button and a list of links: 'View tables in Topcat', 'View tables in Aladin', and 'View images in Aladin'.
- Radial Hyperbolic Services**: A tabbed interface with 'Radial' selected.
- Main View**: Displays a network diagram with a central node '0.000000,0.000000' connected to several other nodes. A context menu is open over the central node, showing options: 'Save', 'View in Browser', 'Transcript Viewer', 'To VisIVO', 'To Topcat' (highlighted with a sub-menu 'as VOTable'), 'To Aladin', 'Broadcast as VOTable', 'Broadcast as FITS', and 'Broadcast as Spectrum'.

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# It's not just for visualisation apps...


http://plastic.sourceforge.net/tupperware/PlasticApplet/ShowApplet.html vospec

ADASS 2006 Tucson Astro Runtime/Plastic Applet ... Pandora Internet Radio - Find New...


This page shows how you can use an embedded applet and JavaScript to access applications through [Plastic](#) from a web page. This simple example is limited to sending VOTables to applications. As an added bonus, you can also save files to MySpace through the Astro Runtime. Further Astro Runtime functionality will follow soon. All the following are standard html controls.

Enter a URL to a VOTable in the textbox below.

If the AstroRuntime and the Plastic Hub are not running, then run the [Workbench](#) to start them.




**Astro Runtime**  
An API for the VO  
connected




Click on any icons appearing below to send the VOTable to that application.


**Plastic applications:**



VisIVO



topcat



Aladin

If there are no applications listed, you might like to start some Plastic-compatible applications by trying the examples on [this page](#).

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# It's not just for visualisation apps...

- AstroScope
- Web pages such as DataScope
- Scripting
- VOSpace
- Datamini

- Register your application

```
id =  
s.plastic.hub.registerNoCallback("m  
yapp")
```

- Send messages to other apps:

```
responses =  
s.plastic.hub.request(id, message,  
args)
```

# Why Plastic?

- It's very simple to implement
    - Your application can be “plasticized” in minutes
  - Cross platform
  - Language-agnostic
    - Java, Python, Tcl, Perl, C++
  - Large existing application-base
    - >14 apps as of Oct 06
  - Access to the AstroRuntime and all IVOA services “for free”
- 
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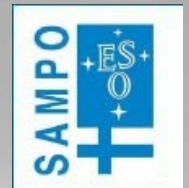
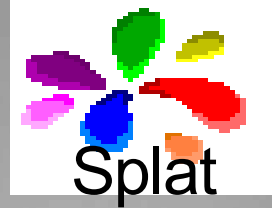


# Is that it? OK, you convinced me.

- Come and find me during ADASS
  - Go to <http://plastic.sourceforge.net>
    - Join the mailing list
    - Download API, libraries
    - Run a Plastic Hub
    - Try some “plasticised” applications
  - Come to tonight's BoF
  - Email me
- 
-

**Mirage**  
coming soon...

# Who we are



# PLASTIC

