

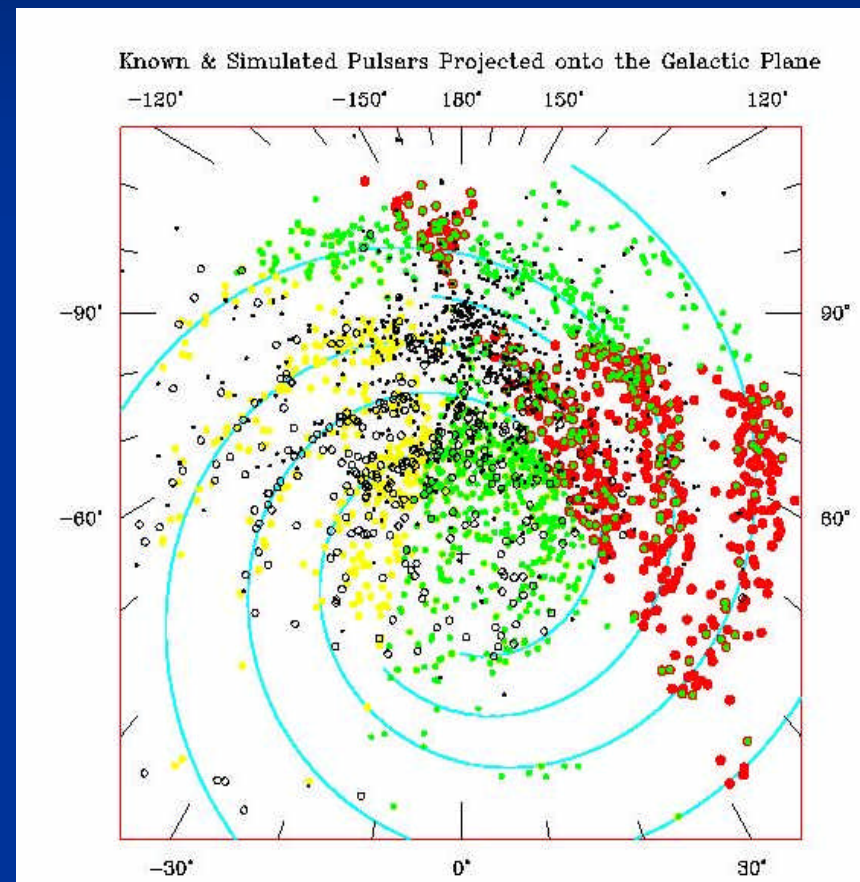
Crossmatch between Pulsar-ALFA Database and SIAP Archives

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With the indispensable help of
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Galactic Plane Pulsar Survey

- Started in Aug. 2004
- To continue for 4-5 years
- Extension to globular clusters and high latitudes
- 19 new pulsars found with preliminary data processing
- 1 is in a highly relativistic binary
- Total new pulsar discoveries expected: ~ 1000 !



Instrument

- ✍ Arecibo telescope with new 7-beam ALFA receiver
- ✍ Frequency: 1.42GHz
- ✍ Integration time: 67s (precursor), 135s/278s (ongoing)
- ✍ Beam size: ~ 3.5 arcmin (beam footprints overlap)



Pulsar Extras

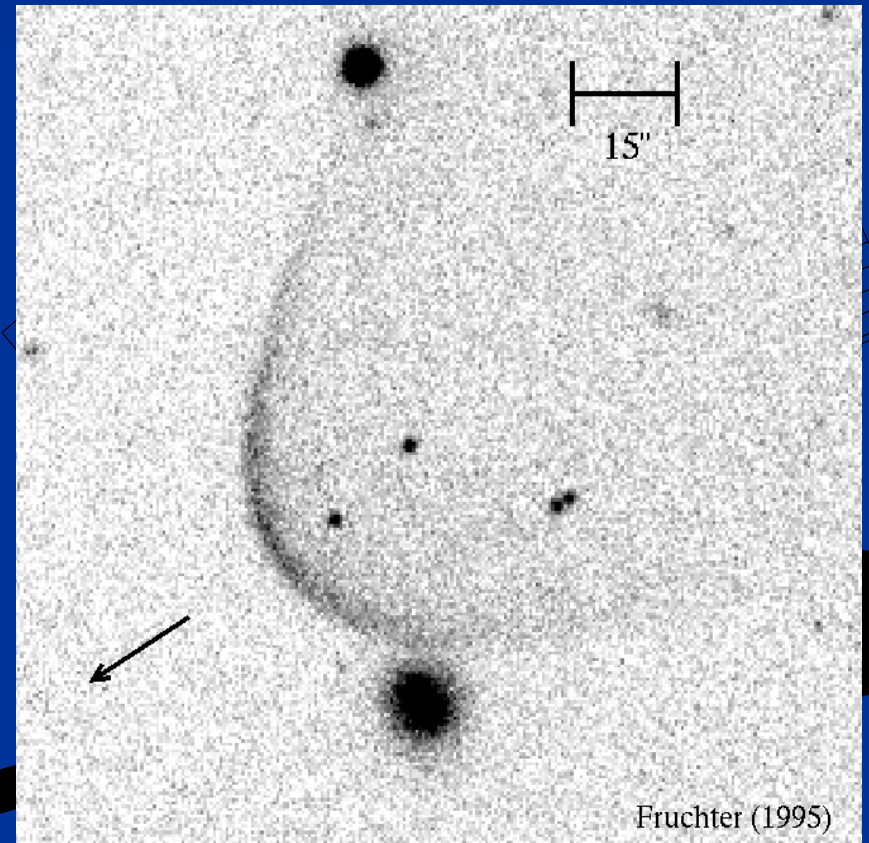
- ✍ Companions at other wavelengths
 - ✍ Bow shocks
 - ✍ Supernova remnants
 - ✍ Jets
- ✍ Can look for them in existing data!

Pulsar Extras



Guitar Nebula:
B2224+65

Bow shock:
J0437-4715



What we have

- ✍ MySQL local database:
 - ✍ Tables with pointing data
 - ✍ Tables with pulsar candidates
 - ✍ Intermediate data processing results
- ✍ PHP web interface:
 - ✍ Query the database
 - ✍ Query SIAP archives
- ✍ SIAP web services:
 - ✍ Images and tabular data/metadata from various surveys

MySQL Local Database

```
mysql> show tables
-> ;
+-----+
| Tables_in_PALFA |
+-----+
| atnfshort        |
| candidates       |
| drives           |
| longerproc       |
| observations      |
| observations_test|
| pointings        |
| prelimproc       |
| results          |
+-----+
9 rows in set (0.00 sec)
```

```
mysql> describe observations;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| obs_ID         | varchar(16)   |      | PRI | 0        |       |
| pointing_ID    | varchar(20)   | YES  |     | NULL     |       |
| date           | datetime      | YES  |     | NULL     |       |
| int_time       | int(11)       | YES  |     | NULL     |       |
| filename       | varchar(255)  | YES  |     | NULL     |       |
| disk_ID        | varchar(64)   | YES  |     | NULL     |       |
| observer       | varchar(64)   | YES  |     | NULL     |       |
| comments       | varchar(255)  | YES  |     | NULL     |       |
| rfi_comments   | varchar(255)  | YES  |     | NULL     |       |
| ra0            | varchar(16)   | YES  |     | NULL     |       |
| decl0          | varchar(16)   | YES  |     | NULL     |       |
| ra1            | varchar(16)   | YES  |     | NULL     |       |
| decl1          | varchar(16)   | YES  |     | NULL     |       |
| ra2            | varchar(16)   | YES  |     | NULL     |       |
| decl2          | varchar(16)   | YES  |     | NULL     |       |
| ra3            | varchar(16)   | YES  |     | NULL     |       |
| decl3          | varchar(16)   | YES  |     | NULL     |       |
| ra4            | varchar(16)   | YES  |     | NULL     |       |
| decl4          | varchar(16)   | YES  |     | NULL     |       |
| ra5            | varchar(16)   | YES  |     | NULL     |       |
| decl5          | varchar(16)   | YES  |     | NULL     |       |
| ra6            | varchar(16)   | YES  |     | NULL     |       |
| decl6          | varchar(16)   | YES  |     | NULL     |       |
| ra7            | varchar(16)   | YES  |     | NULL     |       |
| decl7          | varchar(16)   | YES  |     | NULL     |       |
| archived       | int(11)       | YES  |     | 0        |       |
| overflow       | int(11)       | YES  |     | 0        |       |
+-----+-----+-----+-----+-----+-----+
27 rows in set (0.00 sec)
```

Web Interface

<http://localhost/~deneva/palfa/PALFAMysql.php>

Future Work

✍ Known pulsars:

- ✍ Automate fetching of images
- ✍ Look for extended features around young, fast-moving pulsars
- ✍ Include candidate info in queries
- ✍ Include intermediate data products in queries
- ✍ SkyNode interface for database