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Software Interface Specification

PCRS Guide Star Catalog

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Change Log

| Revision | Date | Change Description |
|----------|------------|---|
| Basic | 11/21/2001 | New document release. |
| Final | 3/6/2002 | Add version information to catalog file. |
| Final | 5/6/2003 | Removed ITAR statement. After review it was determined that this document does not contain ITAR-restricted information. The content of the document was not changed. For configuration reasons, the revision version was not changed. |
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1 Introduction

1.1 Purpose

This Software Interface Specification (SIS) contains the description of the PCRS Guide Star Catalog (GSC), which is a text file prepared by LMMSO and used in SIRTf mission operations to select guide stars for the PCRS sensor.

1.2 Scope

This document defines the file structure of the PCRS Guide Star Catalog.

1.3 Applicable Documents

The following document defines requirements for stars that will be included in the catalog file:

- [1] Mainzer, A. K., *Pointing Calibration & Reference Sensor Guide Star Catalog Requirements*, EM PCS-135, Lockheed Martin Missiles and Space (SIRTf Project), to be released. (Use latest revision.)

The following document defines the algorithms used to process star data from the catalog:

- [2] Tietz, J. C., and J. G. Brunton, *SIRTf SPAS Requirements and Design Specification, Volume 13—PCRS_STAR_CAT_TOOL*, 674-MO-EOT-151, Lockheed Martin Missiles and Space (SIRTf Project), to be released. (Use latest version.)

In the event of disagreement between this document and Ref. [1] regarding which stars or how many stars are to be included, Ref. [1] shall govern. In the event of any other disagreement between this document and the referenced documents regarding file, including but not limited to disagreements in content, structure, format, catalog epoch, range of values, reference frame or measurement units for data items, this document shall govern.

1.4 Functional Description

The GSC is a plain ASCII text file, using Unix end-of-line conventions, with a fixed line length. File size is expected to be between 10 and 30 megabytes. Each line of the file represents a single star. Within each line are 23 fields, providing information on star identity, validity and quality of the star information, position, position errors due to various causes, visual magnitude, proper motion and parallax and errors in these quantities, magnitude error and codes identifying the source of the position, proper motion and parallax data.

1.5 Environment

The GSC will reside on disks on Sun Unix computers at the SIRTf MSA in Denver and also at various other locations. Each location will have a copy rather than accessing a master copy over the network during use.

1.6 Generation Method and Frequency

The GSC will be updated only as problems are identified with specific stars or groups of stars or where a need is identified for additional stars. Stars will be selected according to criteria in Ref. [1] and obtained from sources identified in Ref. [1].

2 Detailed Interface Specifications

2.1 File Format

2.1.1 Header Line(s)

The first line and an arbitrary number of contiguous succeeding lines shall comprise exactly 147 ASCII characters, including the new-line character ending each line. These lines shall all start with the ASCII "pound" character ("#"). The first of these lines shall have a fixed format, as defined below. The remaining header lines, if any, may contain arbitrary text identifying the catalog, providing usage information, explaining changes, etc., provided that the lines conform to the requirements for fixed line length and initial "#" character. If the full line length is not needed for text, the line shall be padded with ASCII space (blank) characters to the required length.

The first header line shall provide a) the catalog name, b) the version number and version creation date, c) the total number of stars in the catalog, and d) the total number of valid stars in the catalog. Except for the numeric values, which are version-dependent but are shown as an example, the header line shall read:

```
# SIRTF PCRS GSC, VERSION 0.0, CREATION DATE: 2002 8 13, 247032 OUT OF
247032 STARS ARE VALID
```

The Fortran format for the first 146 characters of the header line is defined as: '#',A24,I4,A1,I1,A16,I5,2I3,A1,I7,A7,I7,A16,A50. The final 50 characters shall consist of ASCII space (blank) characters.

2.1.2 Remaining Lines

Each line shall comprise exactly 147 ASCII characters, including the new-line character ending each line.

If any fields are unused, a zero value will appear, i.e., no fields will be "squeezed out" or left blank.

The file shall be sorted by declination, in ascending order, i.e., starting with negative declinations.

The epoch for the star data (but *not* the reference frame in which the star data is expressed) shall be Julian date 2453187.5, which corresponds to July 1, 2004, at 0000 UTC. All position, motion, error and parallax information in the catalog shall be with respect to the **ICRS coordinate** frame. **All error parameters represent 1 sigma values.**

In the discussion that follows, the expression "per year" refers to a Julian year of exactly 365 days and 6 hours, and the term "radial" refers to an unspecified direction upon the celestial sphere, perpendicular to the line of sight.

The list below details the contents of each line of the catalog file. In this list, column numbers are C-language (zero-based) subscripts for the characters within the line and the prototype for a field uses the following convention:

- '9' stands for a digit;
- '.' stands for a decimal point
- ' ' stands for an ASCII blank (space) character (guaranteed to be blank)
- '0' is an "optional" digit, i.e., will be blank if the number's magnitude is small enough not to require a digit in the column. This may also be a minus sign, but if it is, the character immediately to its right must be a digit. Therefore, a field with the prototype 9.999 can never be negative, as there is no room for a minus sign.

Field 1

Columns: 0-11

Number of columns: 12

Prototype: "0009 00009 9"

Equivalent FORTRAN format: I4,1X,I5,1X,I1

Field name: Star ID

Units: n/a

Constraints: Consists of three subfields. The first is a number between 1 and 9537, inclusive; the second is a number between 1 and 12119, inclusive; the third is a number between 1 and 4, inclusive. Example field contents:

"3523 10234 3"

" 3 2 1"

"2343 3253 3"

" 232 10342 1"

Comments: Tycho number

Field 2

Columns: 12-13

Number of columns: 2

Prototype: " 9"

Equivalent FORTRAN format: 1X,I1

Field name: Validity bit

Units: n/a

Constraints: Must be 0 or 1

Comments: 0 = valid; 1 = do not use

Field 3

Columns: 14-15

Number of columns: 2

Prototype: " 9"

Equivalent FORTRAN format: 1X,I1

Field name: Quality grade

Units: n/a

Constraints: Must be 0 or 1

Comments: 0 = "Grade A"; 1 = "Grade B"

Field 4

Columns: 16-21

Number of columns: 6

Prototype: " 009.9"

Equivalent FORTRAN format: 1X,F5.1

Field name: Mission radial star position error (1-sigma)

Units: milliarcsec

Constraints: ≥ 0.0 (no sign)

Comments: Valid to July 1, 2009; includes effect of one week error in observation epoch.

Field 5

Columns: 22-27

Number of columns: 6

Prototype: " 009.9"

Equivalent FORTRAN format: 1X,F5.1

Field name: Position error due to one-week error in observation epoch

Units: milliarcsec

Constraints: ≥ 0 (no sign)

Comments: Radial error

Field 6

Columns: 28-33

Number of columns: 6

Prototype: " 09.99"

Equivalent FORTRAN format: 1X,F5.2

Field name: V-band (Johnson) magnitude

Units: n/a

Constraints: 7.00 to 10.00

Field 7

Columns: 34-46

Number of columns: 13

Prototype: " 009.99999999"

Equivalent FORTRAN format: 1X,F12.8

Field name: Star right ascension at J2004.5

Units: deg

Constraints: 0 to 359.99999999

Comments: If right ascension rounds to 360.0 with the specified number of decimal places, it may be listed as either 0 or 360, though the former is preferred.

Field 8

Columns: 47-59

Number of columns: 13
Prototype: " 009.99999999"
Equivalent FORTRAN format: 1X,F12.8
Field name: Star declination at J2004.5
Units: deg
Constraints: -90.00000000 to 90.00000000

Field 9

Columns: 60-68
Number of columns: 9
Prototype: " 00009.99"
Equivalent FORTRAN format: 1X,F8.2
Field name: Proper motion in right ascension multiplied by cosine of declination
Units: milliarcsec/yr
Constraints: -1000 to 1000
Comments: Any stars with larger proper motion will not
be listed in the catalog

Field 10

Columns: 69-77
Number of columns: 9
Prototype: " 00009.99"
Equivalent FORTRAN format: 1X,F8.2
Field name: Proper motion in declination
Units: milliarcsec/yr
Constraints: -1000 to 1000
Comments: Any stars with larger proper motion will not
be listed in the catalog

Field 11

Columns: 78-85
Number of columns: 8
Prototype: " 0009.99"
Equivalent FORTRAN format: 1X,F7.2
Field name: Trigonometric parallax
Units: milliarcsec
Constraints: 0 to 150
Comments: More field width than needed, but that's the
agreement

Field 12

Columns: 86-91
Number of columns: 6
Prototype: " 9.999"
Equivalent FORTRAN format: 1X,F5.3
Field name: Magnitude error

Units: **magnitude**

Constraints: ≥ 0

Field 13

Columns: 92-98

Number of columns: 7

Prototype: " 009.99"

Equivalent FORTRAN format: 1X,F6.2

Field name: Star right ascension error at J2004.5 multiplied by cosine of declination

Units: milliarcsec

Constraints: 0 to 100

Field 14

Columns: 99-105

Number of columns: 7

Prototype: " 009.99"

Equivalent FORTRAN format: 1X,F6.2

Field name: Star declination error at J2004.5

Units: milliarcsec

Constraints: 0 to 100

Field 15

Columns: 106-110

Number of columns: 5

Prototype: " 9.99"

Equivalent FORTRAN format: 1X,F4.2

Field name: Proper motion knowledge error in right ascension multiplied by cosine of declination

Units: milliarcsec/yr

Constraints: ≥ 0

Field 16

Columns: 111-115

Number of columns: 5

Prototype: " 9.99"

Equivalent FORTRAN format: 1X,F4.2

Field name: Proper motion knowledge error in declination

Units: milliarcsec/yr

Constraints: ≥ 0

Field 17

Columns: 116-121

Number of columns: 6

Prototype: " 09.99"

Equivalent FORTRAN format: 1X,F5.2

Field name: Parallax error

Units: milliarcsec

Constraints: ≥ 0

Field 18

Columns: 122-127

Number of columns: 6

Prototype: " 09.99"

Equivalent FORTRAN format: 1X,F5.2

Field name: Position error due to quad disturbing
objects

Units: milliarcsec

Constraints: ≥ 0

Field 19

Columns: 128-133

Number of columns: 6

Prototype: " 09.99"

Equivalent FORTRAN format: 1X,F5.2

Field name: Position error due to background disturbing
objects

Units: milliarcsec

Constraints: ≥ 0

Field 20

Columns: 134-139

Number of columns: 6

Prototype: " 09.99"

Equivalent FORTRAN format: 1X,F5.2

Field name: Position error due to background slope disturbing
objects

Units: milliarcsec

Constraints: ≥ 0

Field 21

Columns: 140-141

Number of columns: 2

Prototype: " 9"

Equivalent FORTRAN format: 1X,I1

Field name: Source for star position

Units: n/a

Constraints: 0 or 1

Comments: 0 = Hip, 1 = Tycho

Field 22

Columns: 142-143

Number of columns: 2

Prototype: " 9"
Equivalent FORTRAN format: 1X,I1
Field name: Source for proper motion
Units: n/a
Constraints: 0, 1 or 2
Comments: 0 = Hip, 1 = Tycho, 2 = ACT

Field 23

Columns: 144-145
Number of columns: 2
Prototype: " 9"
Equivalent FORTRAN format: 1X,I1
Field name: Source for parallax
Units: n/a
Constraints: 0, 1 or 2
Comments: 0 = Hip, 1 = Tycho, 2 = ACT

2.1.3 Example

The text on the following page shows an example of the file format. The data shown is not real star data.

SIRTf PCRS GSC, VERSION 0.0, CREATION DATE: 2002 8 13, 247032 OUT OF 247032 STARS ARE VALID
 # This is a dummy catalog for testing only. Its stars are not selected to be appropriate PCRS guide stars, and much of the data included is
 # random or estimated. This catalog does, however, illustrate the required catalog line formatting.

| # | Star-ID | V | Q | posEr | pErWk | vMag | rightAscensn | declination | prpMtnRA | prpMtnDc | parllx | magEr | raErr | declEr | mKER | mKED | plxEr | dOjBE | bkgEr | bstEr | P | M | X | |
|------|---------|---|---|-------|-------|-------|--------------|-------------|--------------|----------|--------|-------|-------|--------|--------|------|-------|-------|-------|-------|------|---|---|---|
| 54 | 1139 | 3 | 0 | 1 | 8.1 | 713.0 | 8.05 | 0.00862917 | -51.89354583 | 101.85 | 0.22 | 7.75 | 0.007 | 5.73 | 5.73 | 0.07 | 0.07 | 0.97 | 0.46 | 3.12 | 0.00 | 1 | 1 | 1 |
| 324 | 1139 | 1 | 0 | 1 | 11.2 | 545.6 | 8.58 | 0.03641583 | -50.86697639 | 66.90 | 40.00 | 10.76 | 0.010 | 7.92 | 7.92 | 0.08 | 0.08 | 1.10 | 1.05 | 1.38 | 0.00 | 0 | 0 | 0 |
| 243 | 10017 | 2 | 0 | 1 | 10.3 | 85.1 | 8.70 | 0.07010625 | -49.35226583 | -12.15 | 0.55 | 4.47 | 0.010 | 7.28 | 7.28 | 0.08 | 0.08 | 1.15 | 0.33 | 2.34 | 0.00 | 0 | 0 | 0 |
| 743 | 10016 | 2 | 0 | 1 | 25.8 | 340.0 | 9.32 | 0.00842083 | -45.76199000 | 48.45 | 3.44 | 14.30 | 0.017 | 18.24 | 18.24 | 0.93 | 0.93 | 13.20 | 3.71 | 3.95 | 0.00 | 0 | 0 | 0 |
| 233 | 10017 | 1 | 0 | 1 | 44.7 | 534.0 | 9.37 | 0.06138292 | -43.60706722 | 72.60 | -23.44 | 0.40 | 0.016 | 31.61 | 31.61 | 0.95 | 0.95 | 13.50 | 2.53 | 2.80 | 0.00 | 0 | 0 | 0 |
| 233 | 10017 | 3 | 0 | 1 | 26.6 | 50.0 | 9.62 | 0.05898250 | -41.92338861 | -3.30 | 6.33 | 5.90 | 0.018 | 18.81 | 18.81 | 0.83 | 0.83 | 11.70 | 2.39 | 2.14 | 0.00 | 0 | 0 | 0 |
| 4353 | 10016 | 3 | 0 | 1 | 8.8 | 67.8 | 8.56 | 0.00997333 | -40.59120222 | 3.30 | 9.11 | 2.87 | 0.010 | 6.22 | 6.22 | 0.08 | 0.08 | 1.11 | 0.64 | 3.56 | 0.00 | 0 | 0 | 0 |
| 2343 | 10016 | 4 | 0 | 1 | 7.8 | 366.3 | 8.13 | 0.05099000 | -40.19239250 | -45.15 | -26.44 | 6.15 | 0.020 | 5.52 | 5.52 | 0.07 | 0.07 | 1.00 | 1.98 | 1.81 | 0.00 | 1 | 1 | 1 |
| 5353 | 6621 | 4 | 0 | 1 | 24.4 | 254.7 | 8.70 | 0.05590583 | -35.99323778 | 28.20 | -22.99 | 2.30 | 0.012 | 17.25 | 17.25 | 0.71 | 0.71 | 10.10 | 0.70 | 0.19 | 0.00 | 0 | 0 | 0 |
| 7543 | 6621 | 3 | 0 | 1 | 11.0 | 51.5 | 8.41 | 0.04089958 | -35.96022500 | -7.35 | -0.11 | 4.06 | 0.010 | 7.78 | 7.78 | 0.08 | 0.08 | 1.16 | 4.25 | 0.23 | 0.00 | 0 | 0 | 0 |
| 5463 | 6622 | 1 | 0 | 1 | 29.3 | 505.7 | 9.62 | 0.07480000 | -35.92203222 | 44.40 | -56.99 | 3.10 | 0.019 | 20.72 | 20.72 | 0.85 | 0.85 | 12.00 | 4.83 | 5.35 | 0.00 | 0 | 0 | 0 |
| 4543 | 2101 | 4 | 0 | 1 | 33.7 | 227.9 | 9.26 | 0.05139000 | -26.87544972 | 31.80 | -6.99 | 8.00 | 0.016 | 23.83 | 23.83 | 0.79 | 0.79 | 11.20 | 0.22 | 2.33 | 0.00 | 0 | 0 | 0 |
| 8783 | 2101 | 1 | 0 | 1 | 25.9 | 254.4 | 9.37 | 0.02463375 | -26.17895750 | -36.00 | 4.99 | 1.90 | 0.019 | 18.31 | 18.31 | 0.98 | 0.98 | 13.80 | 4.58 | 3.80 | 0.00 | 0 | 0 | 0 |
| 3453 | 2101 | 2 | 0 | 1 | 223.3 | 70.1 | 10.00 | 0.04040875 | -25.32485111 | 1.50 | 9.90 | 31.50 | 0.031 | 157.90 | 157.90 | 1.52 | 1.52 | 21.50 | 4.80 | 3.76 | 0.00 | 0 | 0 | 0 |
| 8783 | 2102 | 4 | 0 | 1 | 172.7 | 156.6 | 9.56 | 0.05993125 | -24.95255333 | 21.00 | 7.70 | 11.10 | 0.022 | 122.12 | 122.12 | 1.17 | 1.17 | 16.60 | 2.23 | 2.23 | 0.00 | 0 | 0 | 0 |
| 9003 | 2102 | 1 | 0 | 1 | 11.7 | 982.6 | 9.05 | 0.07638667 | -23.45269500 | 138.60 | 22.22 | 9.73 | 0.014 | 8.27 | 8.27 | 0.09 | 0.09 | 1.21 | 1.84 | 0.87 | 0.00 | 0 | 0 | 0 |
| 4113 | 2101 | 3 | 0 | 1 | 13.7 | 95.5 | 8.76 | 0.04170208 | -22.59470500 | 9.15 | -10.11 | 3.49 | 0.014 | 9.69 | 9.69 | 0.10 | 0.10 | 1.48 | 1.16 | 5.19 | 0.00 | 0 | 0 | 0 |
| 7453 | 2100 | 4 | 0 | 1 | 30.7 | 588.3 | 9.79 | 0.01389917 | -20.91407056 | 74.85 | -38.22 | 0.10 | 0.031 | 21.71 | 21.71 | 1.45 | 1.45 | 20.50 | 1.77 | 0.47 | 0.00 | 0 | 0 | 0 |
| 7862 | 8958 | 1 | 0 | 1 | 24.5 | 66.7 | 8.38 | 0.04302375 | -19.41464889 | 9.15 | -2.66 | 19.90 | 0.013 | 17.32 | 17.32 | 0.84 | 0.84 | 11.90 | 1.27 | 4.28 | 0.00 | 0 | 0 | 0 |
| 6662 | 8958 | 4 | 0 | 1 | 19.7 | 121.9 | 8.62 | 0.02704542 | -18.01283250 | 16.35 | -6.00 | 11.60 | 0.015 | 13.93 | 13.93 | 0.85 | 0.85 | 12.00 | 1.53 | 4.07 | 0.00 | 0 | 0 | 0 |
| 7852 | 5164 | 2 | 0 | 1 | 240.1 | 178.2 | 9.56 | 0.02931833 | -8.19881694 | 21.00 | -14.40 | 37.70 | 0.023 | 169.78 | 169.78 | 1.32 | 1.32 | 18.60 | 0.85 | 2.23 | 0.00 | 0 | 0 | 0 |
| 4552 | 5164 | 1 | 0 | 1 | 20.7 | 190.2 | 9.13 | 0.00033583 | -5.49436444 | 23.55 | -13.55 | 7.20 | 0.017 | 14.64 | 14.64 | 1.03 | 1.03 | 14.50 | 1.02 | 2.14 | 0.00 | 0 | 0 | 0 |
| 5442 | 5164 | 3 | 0 | 0 | 11.1 | 440.4 | 7.26 | 0.04842208 | -0.36044944 | 61.80 | -11.77 | 5.11 | 0.050 | 7.85 | 7.85 | 0.07 | 0.07 | 0.99 | 1.41 | 5.06 | 0.00 | 1 | 1 | 1 |
| 8762 | 1464 | 2 | 0 | 1 | 13.9 | 39.3 | 9.08 | 0.00089917 | 1.08900889 | -5.25 | -1.99 | 3.54 | 0.019 | 9.83 | 9.83 | 0.10 | 0.10 | 1.39 | 1.84 | 2.18 | 0.00 | 0 | 0 | 0 |
| 8782 | 1464 | 3 | 0 | 0 | 8.9 | 437.9 | 7.52 | 0.06638750 | 8.00723389 | 62.55 | -0.22 | 5.84 | 0.009 | 6.29 | 6.29 | 0.07 | 0.07 | 0.95 | 3.95 | 4.18 | 0.00 | 1 | 1 | 1 |
| 4581 | 9671 | 2 | 0 | 0 | 9.4 | 395.5 | 7.56 | 0.07456458 | 13.31223417 | 55.65 | 9.77 | 12.21 | 0.008 | 6.65 | 6.65 | 0.07 | 0.07 | 0.95 | 1.80 | 3.22 | 0.00 | 1 | 1 | 1 |
| 8761 | 9670 | 4 | 0 | 1 | 17.9 | 408.7 | 8.64 | 0.06594708 | 13.46146528 | 58.35 | -2.22 | 4.30 | 0.016 | 12.66 | 12.66 | 0.83 | 0.83 | 11.70 | 5.09 | 3.56 | 0.00 | 0 | 0 | 0 |
| 7571 | 6209 | 0 | 0 | 1 | 9.6 | 318.7 | 8.50 | 0.06304583 | 23.52922806 | 39.30 | -23.00 | 10.76 | 0.014 | 6.79 | 6.79 | 0.07 | 0.07 | 1.06 | 2.48 | 4.08 | 0.00 | 0 | 0 | 0 |
| 4481 | 9670 | 1 | 0 | 1 | 34.8 | 249.4 | 9.58 | 0.01186958 | 17.44768889 | 21.45 | 28.44 | 13.50 | 0.027 | 24.61 | 24.61 | 1.15 | 1.15 | 16.30 | 2.68 | 3.41 | 0.00 | 0 | 0 | 0 |
| 3431 | 9670 | 3 | 0 | 1 | 46.2 | 38.5 | 9.21 | 0.06408125 | 17.97064333 | 0.00 | 5.50 | 13.40 | 0.021 | 32.67 | 32.67 | 1.00 | 1.00 | 14.20 | 4.82 | 3.47 | 0.00 | 0 | 0 | 0 |
| 581 | 2612 | 3 | 0 | 1 | 24.1 | 104.0 | 8.85 | 0.00335833 | 31.53207083 | 13.50 | -6.22 | 2.90 | 0.019 | 17.04 | 17.04 | 1.13 | 1.13 | 16.00 | 2.65 | 4.78 | 0.00 | 0 | 0 | 0 |
| 4421 | 2613 | 4 | 0 | 1 | 50.4 | 251.4 | 9.26 | 0.05493667 | 33.13985778 | 34.50 | -10.00 | 8.60 | 0.020 | 35.64 | 35.64 | 0.98 | 0.98 | 13.90 | 4.38 | 0.70 | 0.00 | 0 | 0 | 0 |
| 4531 | 2614 | 2 | 0 | 1 | 60.2 | 201.9 | 8.79 | 0.07020167 | 34.91536722 | 28.50 | -4.40 | 12.80 | 0.017 | 42.57 | 42.57 | 0.66 | 0.66 | 9.30 | 2.71 | 1.90 | 0.00 | 0 | 0 | 0 |
| 41 | 2613 | 1 | 0 | 1 | 10.6 | 80.4 | 8.59 | 0.03532292 | 36.58595833 | -7.80 | 8.44 | 4.81 | 0.015 | 7.50 | 7.50 | 0.07 | 0.07 | 0.99 | 1.01 | 1.87 | 0.00 | 0 | 0 | 0 |
| 1 | 2613 | 2 | 0 | 1 | 29.8 | 97.7 | 9.37 | 0.03810292 | 36.86654278 | 13.50 | -3.55 | 17.60 | 0.022 | 21.07 | 21.07 | 0.78 | 0.78 | 11.00 | 3.33 | 5.23 | 0.00 | 0 | 0 | 0 |
| 5567 | 10711 | 3 | 0 | 1 | 16.9 | 99.0 | 9.28 | 0.02723167 | 44.21767028 | 4.05 | -13.55 | 29.50 | 0.021 | 11.95 | 11.95 | 0.81 | 0.81 | 11.40 | 0.24 | 1.27 | 0.00 | 0 | 0 | 0 |
| 57 | 10711 | 2 | 0 | 1 | 20.8 | 202.1 | 9.71 | 0.01269500 | 44.42074361 | -27.00 | -10.22 | 10.20 | 0.030 | 14.71 | 14.71 | 1.03 | 1.03 | 14.50 | 2.20 | 3.13 | 0.00 | 0 | 0 | 0 |
| 7 | 10712 | 1 | 0 | 1 | 15.4 | 460.3 | 9.27 | 0.03891625 | 46.54961917 | -64.50 | -12.77 | 5.70 | 0.018 | 10.89 | 10.89 | 0.79 | 0.79 | 11.20 | 3.88 | 0.24 | 0.00 | 0 | 0 | 0 |
| 21 | 10712 | 0 | 0 | 0 | 6.7 | 114.3 | 7.36 | 0.03733625 | 46.93999667 | 16.20 | -2.00 | 4.29 | 0.005 | 4.74 | 4.74 | 0.06 | 0.06 | 0.84 | 4.39 | 4.24 | 0.00 | 1 | 1 | 1 |
| 4569 | 10711 | 4 | 0 | 1 | 26.4 | 182.4 | 9.42 | 0.03370708 | 49.04276833 | 19.05 | -17.77 | 5.50 | 0.022 | 18.67 | 18.67 | 1.04 | 1.04 | 14.70 | 2.63 | 3.43 | 0.00 | 0 | 0 | 0 |
| 56 | 7195 | 2 | 0 | 1 | 40.8 | 97.3 | 9.98 | 0.06502542 | 50.75250111 | -2.55 | -13.66 | 20.10 | 0.029 | 28.85 | 28.85 | 1.61 | 1.61 | 22.80 | 1.97 | 1.53 | 0.00 | 0 | 0 | 0 |
| 107 | 7195 | 0 | 0 | 1 | 9.2 | 158.1 | 8.61 | 0.05036208 | 50.79118722 | 21.90 | 5.55 | 2.45 | 0.011 | 6.51 | 6.51 | 0.08 | 0.08 | 1.16 | 1.90 | 3.73 | 0.00 | 0 | 0 | 0 |
| 567 | 7194 | 4 | 0 | 1 | 71.1 | 484.8 | 8.95 | 0.04966167 | 51.28312472 | 67.50 | -15.50 | 4.50 | 0.014 | 50.28 | 50.28 | 0.74 | 0.74 | 10.50 | 0.20 | 1.14 | 0.00 | 0 | 0 | 0 |
| 1345 | 7195 | 1 | 0 | 1 | 54.5 | 210.1 | 9.08 | 0.05639667 | 55.69947556 | 30.00 | -1.10 | 22.30 | 0.030 | 38.54 | 38.54 | 1.07 | 1.07 | 15.20 | 4.19 | 1.56 | 0.00 | 0 | 0 | 0 |
| 3455 | 7194 | 3 | 0 | 1 | 51.6 | 389.2 | 8.60 | 0.04806458 | 57.87238083 | 55.50 | 3.30 | 2.50 | 0.020 | 36.49 | 36.49 | 0.47 | 0.47 | 6.60 | 0.13 | 2.78 | 0.00 | 0 | 0 | 0 |
| 456 | 7194 | 2 | 0 | 1 | 93.2 | 105.3 | 9.71 | 0.04479542 | 59.81361111 | 15.00 | -1.10 | 22.70 | 0.024 | 65.90 | 65.90 | 0.90 | 0.90 | 12.70 | 2.95 | 4.95 | 0.00 | 0 | 0 | 0 |
| 134 | 4197 | 4 | 0 | 1 | 39.1 | 90.3 | 8.46 | 0.07558417 | 60.35043639 | -12.90 | 0.22 | 1.10 | 0.012 | 27.65 | 27.65 | 0.70 | 0.70 | 9.90 | 2.59 | 2.43 | 0.00 | 0 | 0 | 0 |
| 345 | 4198 | 0 | 0 | 1 | 79.9 | 724.5 | 8.49 | 0.07819583 | 65.94470389 | 103.50 | 1.10 | 4.40 | 0.012 | 56.50 | 56.50 | 0.42 | 0.42 | 6.00 | 2.85 | 2.39 | 0.00 | 0 | 0 | 0 |