

# Agilp Manual Vignette

Benny Chain

## Introduction

This package was developed to provide a pipeline for the low-level analysis of gene expression microarray data, primarily focused on the Agilent platform, but which also provides utilities which may be useful for other platforms. Agilp v2.0 is made up of five processing functions, which are described briefly below and in more detail in the individual help files for each function. The package is designed for people with little previous experience of R, or of microarray analysis. The package was developed for use in the Innate2Adaptive Immunity Laboratory, Division of Infection and Immunity, UCL, London run by Benny Chain and Maddy Noursadeghi. A number of references describing the microarray work from the laboratory are given at the end of this document.

## A note on default paths in agilp functions

The default folders for all the functions in agilp use folders input, input1 and output within the agilp folder. The user files to be processed (e.g. array scanner files or the output of agilp functions themselves) should be placed within the input or input1 folders as instructed in the help files. Note that after installing the package these folders will initially contain a dummy file called toberemoved.txt in order to avoid the installation process removing empty folders. These dummy files should be deleted before use. To locate the path of the agilp folder on your computer type

```
> file.path(system.file(package="agilp"))  
[1] "/tmp/RtmpV234R4/Rinst1bf7e67f7503d6/agilp"
```

Alternatively, the user can create their own input and output directories, and alter the path description in the function call as appropriate.

## Workflow

A typical workflow for using the package is described below. The examples are designed to be implemented sequentially.

- **AAProcess. Extract and save the red and green median expression data from Agilent scanner arrays, averaging replicate probes.** The raw (unprocessed) expression data is first extracted from the scanner files which are in tab delimited .txt format. This step is platform specific, and uses the column *gMedianSignal* or *rMedianSignal* to identify the data to use. The expression values for replicate probes are averaged. The function can use single or two colour outputs, and treats each colour independently. Output is one spreadsheet per microarray per colour, saved as tab delimited text files to a directory of choice. Each file contains all probe names (first column) and raw (untransformed, unnormalized) expression levels (second column).

Examples. This example extracts expression data from two sample array scanner files which are found in the folder "scanner" within the agilp package extdata folder and places them in the folder output within the agilp package folder.

```
> library(agilp)  
> inputdir<-file.path(system.file(package="agilp"),"extdata","scanner/", "", fsep = .Platform$file.sep)  
> outputdir<-file.path(system.file(package="agilp"),"output/", "", fsep = .Platform$file.sep)  
> AAProcess(input = inputdir, output = outputdir, s = 9)
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output", "", "*..*",  
+ fsep = .Platform$file.sep), recursive=FALSE)
```

The number of lines header to be skipped from scanner array files can be changed from the default value of 9 by setting variable s. AAProcess(input = inputdir, output = outputdir, s = 10)

- **filenamex. Copy extracted raw file names to template.** Typically, the array file names are stored in a database. We use a simple spreadsheet for this (e.g. Excel or other) which contains details such as the date the experiments were run, the types of samples, the experimenter, and any other important experimental detail (see *sample\_template.txt* in the *agilp* *extdata* folder for an example). However, a major source of documentation error occurs while entering the array file names into the template file (array file names are often very long arbitrary alphanumeric sequences). For this reason we use *filenamex* which outputs a text file containing the names of all the files in a directory; this list can be easily copied and pasted directly into a template file.

Examples. This example makes a list of the names of all the files in the folder *agilp/extdata/raw* and saves it in a file called *names.txt* (tab delimited) in the folder *agilp/output*.

```
> library(agilp)
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/", "", fsep = .Platform$file.sep)
> outputdir<-file.path(system.file(package="agilp"),"output/", "", fsep = .Platform$file.sep)
> filenamex(input=inputdir,output=outputdir)
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output", "", "*. *" ,
+ fsep = .Platform$file.sep), recursive=FALSE)
```

- **Baseline. Generate a normalisation baseline file.**

The *AALoess* normalisation function (see below) requires a ‘baseline’ file which contains the mean value for each probe from a number of different arrays against which to normalise each new array. *Baseline* generates such a baseline from a set of arrays. The set can be either all arrays in a chosen directory, or selected from a template file (see help file for more details). By default, all array data is base 2 log transformed before calculating the mean. If the files to be analysed contain different numbers of identifiers, the output will contain only the data for the IDs common to the whole set.

Examples. Takes all the files of unprocessed data in folder *agilp/extdata/raw* , calculates the mean expression value for each probe, and saves as *agilp/output/testbase.txt*.

```
> library(agilp)
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/", "", fsep = .Platform$file.sep)
> outputbase<-file.path(system.file(package="agilp"),"output", "testbase.txt", fsep = .Platform$file.sep)
> template<-file.path(system.file(package="agilp"),"extdata","sample_template.txt", fsep = .Platform$file.sep)
> Baseline(NORM="LOG",allfiles="TRUE",r=2,A=2,B=3,input=inputdir, baseout=outputbase, t = template)
```

Alternatively the following example uses only those data files defined in column 2, rows 2-5 of the template file. In addition, this example does not log transform the data.

```
> Baseline(NORM="FALSE",allfiles="FALSE",r=2,A=2,B=5,input=inputdir, baseout=outputbase, t = template)
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output", "", "*. *" ,
+ fsep = .Platform$file.sep), recursive=FALSE)
```

- **Loader. Select set of processed array files from directory according to criteria from a template file.** It is often necessary to select a series of expression array data files (for example generated by *AAPProcess*) from a directory containing many such files (our repository has around 1000 array data sets so far) according to some criteria in the template file. For example, one might want to analyze all samples from particular dates, or tissue type etc. *Loader* inputs a template file in which each row contains the details for a separate array, and which has previously been sorted according to some predefined criteria (see *sample\_template.txt* in the *agilp/extdata* for an example). It uses the array file names for a set of rows of the template (first and last row chosen by user, but must be contiguous), and either (if *f* =“TRUE”) transfers the chosen files to a different directory, or outputs a single file (by default saved as *alldata.txt*) in which each column contains one array set of data.

Examples. This will copy the files with names given in column 2 , rows 2:3 of the sample template file from the input folder to output folder.

```
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/", "", fsep = .Platform$file.sep)
> outputdir<-file.path(system.file(package="agilp"),"output/", "", fsep = .Platform$file.sep)
> template<-file.path(system.file(package="agilp"),"extdata","sample_template.txt",
```

```
+ fsep = .Platform$file.sep)
> Loader(input=inputdir,output=outputdir,t=template,f="TRUE",r=2,A=2,B=5)
```

Alternatively this will output a single file all\_data.txt with the same data in a merged file. The file is also output back to R as object dataout

```
> Loader(input=inputdir,output=outputdir,t=template,f="FALSE",r=2,A=2,B=5)
```

```
gRaw_arrays_scanner_file1.txt
(+)E1A_r60_1      84.76562
(+)E1A_r60_3      86.65625
(+)E1A_r60_a104   85.42188
(+)E1A_r60_a107   84.73438
(+)E1A_r60_a135   84.98438
(+)E1A_r60_a20    90.53125
(+)E1A_r60_a22    99.98438
(+)E1A_r60_a97    83.65625
(+)E1A_r60_n11    87.15625
(+)E1A_r60_n9     85.90625
(+)eQC-39         83.25000
(+)eQC-40         80.20000
(+)eQC-41         83.15000
(+)eQC-42         84.55000
3xSLv1           84.34967
A_23_P100001     1244.00000
A_23_P100011     145.00000
A_23_P100022     134.00000
A_23_P100056     288.50000
A_23_P100074     1641.00000
A_23_P100092     372.00000
A_23_P100103     173.00000
A_23_P100111     128.00000
A_23_P100127     489.00000
A_23_P100133     184.00000
A_23_P100141     562.00000
A_23_P100156     253.00000
A_23_P100177     116.00000
A_23_P100189      99.00000
A_23_P100196    1209.00000
A_23_P100203    2508.00000
A_23_P100220    1887.50000
A_23_P100240     140.00000
A_23_P10025      191.00000
A_23_P100263    1572.50000
A_23_P100278     110.00000
A_23_P100292    9570.00000
A_23_P100315    3100.00000
A_23_P100326    4399.50000
A_23_P100341   10593.50000
A_23_P100344    1922.00000
A_23_P100355    2719.00000
A_23_P100386      92.50000
A_23_P100392    804.50000
A_23_P100408     80.50000
A_23_P100413    239.00000
A_23_P100420   3512.50000
A_23_P100441    1324.00000
A_23_P100455    328.00000
A_23_P100469    427.00000
A_23_P100478    785.50000
A_23_P100486   11739.00000
```

A_23_P100499	152.00000
A_23_P100501	3271.00000
A_23_P100517	586.00000
A_23_P100522	4774.00000
A_23_P100539	387.00000
A_23_P100556	649.00000
A_23_P100576	5485.00000
A_23_P100583	103.00000
A_23_P100595	94.50000
A_23_P10060	79.00000
A_23_P100602	687.00000
A_23_P10062	91.00000
A_23_P100632	19335.00000
A_23_P100642	366.00000
A_23_P100654	1244.00000
A_23_P100660	3949.00000
A_23_P100676	375.00000
A_23_P100693	670.50000
A_23_P100704	592.50000
A_23_P100711	3972.50000
A_23_P100730	436.00000
A_23_P100754	231.50000
A_23_P100764	2644.00000
A_23_P10077	270.50000
A_23_P100779	367.50000
A_23_P100788	211.00000
A_23_P100795	408.00000
A_23_P100802	7216.00000
A_23_P10081	178.00000
A_23_P100868	2487.00000
A_23_P100872	97.00000
A_23_P100883	2943.00000
A_23_P10091	163.50000
A_23_P100912	190.00000
A_23_P100931	80.00000
A_23_P100935	82.00000
A_23_P100959	99.00000
A_23_P100963	223.00000
A_23_P100990	101.00000
A_23_P100991	81.00000
A_23_P101007	387.00000
A_23_P101013	1405.00000
A_23_P101025	364.00000
A_23_P101038	83.00000
A_23_P101048	98.50000
A_23_P101054	180.00000
A_23_P101073	106.00000
A_23_P101084	98.00000
A_23_P101093	827.00000
A_23_P101111	857.00000
A_23_P101121	511.00000
A_23_P101131	93.00000
A_23_P101141	196.00000
A_23_P101185	4124.00000
A_23_P101193	563.00000
A_23_P101208	3651.00000
A_23_P10121	3057.00000
A_23_P101237	1711.00000
A_23_P101240	15390.50000
A_23_P101246	379.00000

A_23_P101253	381.50000
A_23_P101258	220.00000
A_23_P10127	7540.00000
A_23_P101272	1224.50000
A_23_P101281	497.50000
A_23_P101297	295.00000
A_23_P101303	1100.00000
A_23_P101308	263.50000
A_23_P101319	130.00000
A_23_P101321	159.50000
A_23_P101332	1987.00000
A_23_P101342	316.00000
A_23_P10135	546.50000
A_23_P101351	740.00000
A_23_P101374	203.00000
A_23_P101380	834.00000
A_23_P101392	320.00000
A_23_P1014	1205.50000
A_23_P101407	7430.50000
A_23_P101427	166.50000
A_23_P101434	106.00000
A_23_P101461	6686.00000
A_23_P101476	161.50000
A_23_P101480	356.00000
A_23_P101505	794.50000
A_23_P101516	175.00000
A_23_P101521	78.00000
A_23_P101532	64534.20000
A_23_P101551	2714.50000
A_23_P10156	394.00000
A_23_P101564	91.00000
A_23_P101573	83.00000
A_23_P101615	330.00000
A_23_P101623	135.00000
A_23_P101636	84.00000
A_23_P101642	805.00000
A_23_P101655	1207.00000
A_23_P101671	231.00000
A_23_P101683	81.50000
A_23_P101699	566.00000
A_23_P101707	1906.50000
A_23_P10172	92.00000
A_23_P101737	339.00000
A_23_P101742	1413.00000
A_23_P101759	205.50000
A_23_P101761	910.00000
A_23_P101774	89.00000
A_23_P101783	115.00000
A_23_P101796	392.00000
A_23_P101806	698.00000
A_23_P101811	223.00000
A_23_P10182	603.00000
A_23_P101829	215.00000
A_23_P101871	326.00000
A_23_P101893	163.00000
A_23_P101905	269.00000
A_23_P101908	192.50000
A_23_P10194	5600.00000
A_23_P101943	1189.00000
A_23_P101950	9901.00000

A_23_P101960	7311.00000
A_23_P101972	156.00000
A_23_P101992	169.00000
A_23_P102000	3021.10000
A_23_P102017	95.00000
A_23_P102037	282.00000
A_23_P102058	352.00000
A_23_P10206	297.00000
A_23_P102060	1751.00000
A_23_P102071	975.50000
A_23_P102083	68.00000
A_23_P102109	1917.00000
A_23_P10211	379.00000
A_23_P102113	279.00000
A_23_P102117	133.00000
A_23_P102122	6253.50000
A_23_P102160	205.00000
A_23_P102172	79.00000
A_23_P102183	2426.00000
A_23_P102192	355.00000
A_23_P102202	11726.00000
A_23_P102235	5885.00000
A_23_P102242	683.00000
A_23_P102258	5873.50000
A_23_P102262	7163.00000
A_23_P102278	87.00000
A_23_P102286	85.50000
A_23_P10232	99.00000
A_23_P102320	1915.00000
A_23_P102331	81.00000
A_23_P102351	184.00000
A_23_P102364	2503.50000
A_23_P102391	386.00000
A_23_P102404	21629.90000
A_23_P102412	747.00000
A_23_P102420	49593.30000
A_23_P102439	119.00000
A_23_P102454	2043.00000
A_23_P102462	117.00000
A_23_P102471	3809.15000
A_23_P102481	89.00000
A_23_P102494	149.00000
A_23_P102508	1182.50000
A_23_P102517	1165.00000
A_23_P102523	288.50000
A_23_P102542	931.50000
A_23_P102551	95.50000
A_23_P102571	15099.00000
A_23_P102575	3246.50000
A_23_P102582	9381.00000
A_23_P102607	105.50000
A_23_P102611	8720.50000
A_23_P102622	285.00000
A_23_P102634	79.00000
A_23_P102681	135.00000
A_23_P102694	83.50000
A_23_P102706	247.00000
A_23_P102731	781.00000
A_23_P102743	287.00000
A_23_P102759	138.00000

A_23_P102769	498.00000
A_23_P102770	1588.00000
A_23_P102816	216.00000
A_23_P102832	2042.00000
A_23_P102842	2041.50000
A_23_P102864	242.50000
A_23_P102876	12896.00000
A_23_P102884	129.00000
A_23_P102890	7136.00000
A_23_P1029	467.00000
A_23_P10291	114.00000
A_23_P102917	91.50000
A_23_P102919	87.00000
A_23_P102925	1436.00000
A_23_P102937	1490.00000
A_23_P102950	180.00000
A_23_P102965	600.00000
A_23_P102973	726.00000
A_23_P102988	173.00000
A_23_P102994	3032.00000
A_23_P103011	537.00000
A_23_P103034	90.00000
A_23_P103041	106.00000
A_23_P10305	257.00000
A_23_P103062	281.00000
A_23_P103070	2849.00000
A_23_P103084	177.00000
A_23_P103099	472.00000
A_23_P103104	488.00000
A_23_P103110	717.00000
A_23_P103120	3092.00000
A_23_P103131	3394.00000
A_23_P103149	5649.50000
A_23_P103172	2215.00000
A_23_P103180	680.00000
A_23_P103201	2201.00000
A_23_P103226	98.00000
A_23_P103232	6305.00000
A_23_P103248	533.00000
A_23_P103256	197.50000
A_23_P103269	114.50000
A_23_P103276	299.00000
A_23_P103282	9325.00000
A_23_P103310	107.50000
A_23_P103315	11200.50000
A_23_P103328	128.00000
A_23_P103334	192.00000
A_23_P103349	83.50000
A_23_P103361	1188.75000
A_23_P103371	135.00000
A_23_P103398	2641.00000
A_23_P103405	178.00000
A_23_P103414	4946.00000
A_23_P103424	81.00000
A_23_P103433	534.50000
A_23_P103442	2955.00000
A_23_P103454	11044.00000
A_23_P103465	118.50000
A_23_P103476	698.00000
A_23_P103486	214.00000

A_23_P103496	108.00000
A_23_P103503	554.00000
A_23_P103511	712.50000
A_23_P103522	82.00000
A_23_P103532	217.00000
A_23_P10356	102.00000
A_23_P103561	274.00000
A_23_P103571	121.00000
A_23_P103588	96.00000
A_23_P103601	1778.50000
A_23_P103617	224.00000
A_23_P103628	2768.00000
A_23_P103631	16923.50000
A_23_P103661	3438.00000
A_23_P103672	2898.50000
A_23_P103690	1005.00000
A_23_P103698	3372.00000
A_23_P103703	166.50000
A_23_P103720	1096.00000
A_23_P10374	3247.00000
A_23_P103743	87.00000
A_23_P103756	156.00000
A_23_P103765	81.50000
A_23_P103775	160.00000
A_23_P103787	1023.00000
A_23_P103795	617.00000
A_23_P1038	196.00000
A_23_P103803	81.00000
A_23_P103812	144.50000
A_23_P103824	1076.00000
A_23_P103837	819.00000
A_23_P10385	1040.40000
A_23_P103864	485.00000
A_23_P103877	914.00000
A_23_P103885	8531.00000
A_23_P103897	104.00000
A_23_P103905	1208.50000
A_23_P10391	430.00000
A_23_P103919	1757.00000
A_23_P103923	131.00000
A_23_P103932	1080.00000
A_23_P103942	1387.50000
A_23_P103951	5832.00000
A_23_P103968	1337.00000
A_23_P103971	97.00000
A_23_P103981	19732.00000
A_23_P103996	629.00000
A_23_P10401	251.50000
A_23_P104012	92.00000
A_23_P104022	2387.00000
A_23_P104025	569.00000
A_23_P104046	501.00000
A_23_P104054	1738.50000
A_23_P104065	911.00000
A_23_P104073	181.00000
A_23_P104086	173.00000
A_23_P104098	100.00000
A_23_P104109	457.00000
A_23_P104116	21624.70000
A_23_P104138	219.00000



A_23_P104146	728.00000
A_23_P104151	424.00000
A_23_P104188	540.00000
A_23_P104193	2763.00000
A_23_P104199	1128.55000
A_23_P104201	5256.00000
A_23_P104224	229.00000
A_23_P104237	98.00000
A_23_P104252	226.00000
A_23_P104275	90.00000
A_23_P104282	254.00000
A_23_P104295	297.00000
A_23_P1043	539.00000
A_23_P104318	21087.70000
A_23_P104323	586.00000
A_23_P104335	80.00000
A_23_P104346	457.00000
A_23_P104351	2140.00000
A_23_P104362	6140.00000
A_23_P104372	6645.00000
A_23_P104387	4674.00000
A_23_P104413	9091.00000
A_23_P10442	876.00000
A_23_P104438	196.50000
A_23_P104445	177.50000
A_23_P104451	5345.00000
A_23_P104464	181.00000
A_23_P104471	1338.00000
A_23_P104484	80.00000
A_23_P104493	321.00000
A_23_P104509	121.00000
A_23_P104522	166.00000
A_23_P104555	91.00000
A_23_P104563	224.00000
A_23_P104579	569.00000
A_23_P10458	91.00000
A_23_P104583	443.50000
A_23_P104594	102.00000
A_23_P104607	2069.00000
A_23_P104617	244.50000
A_23_P104624	1572.00000
A_23_P10463	16057.00000
A_23_P104641	2339.00000
A_23_P104651	5964.00000
A_23_P104676	3952.00000
A_23_P104689	525.45000
A_23_P104692	694.00000
A_23_P104705	179.00000
A_23_P104734	4757.50000
A_23_P104741	250.00000
A_23_P104762	545.00000
A_23_P104798	186.10000
A_23_P104804	277.50000
A_23_P104819	98.00000
A_23_P104845	89.00000
A_23_P104853	94.50000
A_23_P104865	79.00000
A_23_P104876	1045.00000
A_23_P10488	160.00000
A_23_P104881	117.50000

A_23_P104892	13696.00000
A_23_P104942	3675.00000
A_23_P10497	499.00000
A_23_P104972	90.00000
A_23_P104996	125.00000
A_23_P10500	85.00000
A_23_P105002	594.00000
A_23_P105012	112.00000
A_23_P105028	1233.50000
A_23_P105044	2551.00000
A_23_P10506	178.00000
A_23_P105066	1322.00000
A_23_P105088	90.00000
A_23_P105118	89.00000
A_23_P105138	1352.00000
A_23_P105144	319.50000
A_23_P10518	120.50000
A_23_P105184	1456.00000
A_23_P105197	122.50000
A_23_P105212	100.00000
A_23_P105227	99.50000
A_23_P10525	91.00000
A_23_P105251	332.50000
A_23_P105264	341.00000
A_23_P105276	864.00000
A_23_P105307	174.00000
A_23_P105313	3329.50000
A_23_P105368	123.00000
A_23_P105382	233.00000
A_23_P105392	21202.40000
A_23_P105409	182.00000
A_23_P10542	119.00000
A_23_P105423	104.00000
A_23_P105436	135.00000
A_23_P105442	1250.00000
A_23_P105453	87.00000
A_23_P105461	97.00000
A_23_P105465	83.00000
A_23_P105475	116.50000
A_23_P105495	110.00000
A_23_P105519	1105.00000
A_23_P105524	94.00000
A_23_P105535	448.50000
A_23_P105545	104.00000
A_23_P105562	186.95000
A_23_P105571	858.00000
A_23_P105583	416.00000
A_23_P10559	642.00000
A_23_P105592	7167.00000
A_23_P1056	570.00000
A_23_P10561	79.00000
A_23_P105619	285.50000
A_23_P105625	1494.00000
A_23_P10564	72.00000
A_23_P105646	724.00000
A_23_P105651	70.50000
A_23_P105664	4484.00000
A_23_P105691	94.50000
A_23_P105705	80.00000
A_23_P105730	86.00000

A_23_P105732	5018.00000
A_23_P105747	350.00000
A_23_P105753	550.00000
A_23_P105794	131.00000
A_23_P105803	138.00000
A_23_P105815	246.00000
A_23_P105833	504.00000
A_23_P105856	99.00000
A_23_P105862	179.00000
A_23_P105873	74.00000
A_23_P105886	86.00000
A_23_P105900	8387.00000
A_23_P10591	7305.00000
A_23_P105923	116.00000
A_23_P105939	102.00000
A_23_P105957	3658.00000
A_23_P105963	130.00000
A_23_P105973	321.00000
A_23_P106	243.00000
A_23_P106002	12168.00000
A_23_P106016	279.00000
A_23_P106024	248.00000
A_23_P106042	95.00000
A_23_P10605	556.00000
A_23_P106056	5281.00000
A_23_P106069	87.50000
A_23_P106080	88.00000
A_23_P106103	96.00000
A_23_P106117	483.50000
A_23_P106127	1179.00000
A_23_P106131	5604.00000
A_23_P10614	278.50000
A_23_P106145	4310.00000
A_23_P106158	302.00000
A_23_P106162	495.50000
A_23_P106174	103.50000
A_23_P106194	4285.00000
A_23_P106204	628.50000
A_23_P106226	5984.00000
A_23_P106236	90.00000
A_23_P106241	2226.00000
A_23_P106258	130.00000
A_23_P106280	2098.50000
A_23_P106299	9061.00000
A_23_P106322	318.00000
A_23_P106362	271.00000
A_23_P106371	170.50000
A_23_P106389	117.00000
A_23_P106391	383.00000
A_23_P10640	112.50000
A_23_P106405	670.00000
A_23_P106412	1024.00000
A_23_P106425	148.00000
A_23_P106433	3566.00000
A_23_P106439	854.00000
A_23_P106463	3001.00000
A_23_P10647	322.00000
A_23_P106472	9703.00000
A_23_P106481	3735.00000
A_23_P106497	323.00000

A_23_P106505	522.50000
A_23_P106522	1894.00000
A_23_P106532	1722.00000
A_23_P106544	6777.50000
A_23_P106559	118.00000
A_23_P106562	708.50000
A_23_P106575	2616.00000
A_23_P106602	114.00000
A_23_P106617	585.00000
A_23_P106629	167.00000
A_23_P106633	2990.00000
A_23_P106656	79.00000
A_23_P106661	160.00000
A_23_P106663	103.00000
A_23_P106675	401.00000
A_23_P106682	7958.00000
A_23_P106694	2114.00000
A_23_P106708	92440.20000
A_23_P106720	297.00000
A_23_P106727	1611.50000
A_23_P106737	628.50000
A_23_P106741	14091.00000
A_23_P106761	859.00000
A_23_P106773	2697.00000
A_23_P106798	376.50000
A_23_P106806	106.00000
A_23_P106814	159.00000
A_23_P106822	2021.50000
A_23_P106835	1841.00000
A_23_P106844	10954.00000
A_23_P10685	2067.00000
A_23_P106859	6059.00000
A_23_P106874	171.00000
A_23_P106887	5083.00000
A_23_P106898	462.00000
A_23_P106906	200.00000
A_23_P106922	678.00000
A_23_P106933	106.00000
A_23_P106945	221.50000
A_23_P106973	22625.60000
A_23_P10699	235.00000
A_23_P106998	2149.00000
A_23_P10701	363.00000
A_23_P107036	2133.00000
A_23_P107048	735.00000
A_23_P107051	364.00000
A_23_P107064	121.00000
A_23_P107073	8229.00000
A_23_P107087	593.50000
A_23_P107102	84.00000
A_23_P107116	427.00000
A_23_P107132	83.00000
A_23_P107154	1461.00000
A_23_P107166	219.00000
A_23_P107173	95.00000
A_23_P1072	8840.00000
A_23_P107206	332.20000
A_23_P10721	84.00000
A_23_P107211	369.00000
A_23_P107214	1256.00000

A_23_P107238	125.50000
A_23_P107247	105.00000
A_23_P107257	838.00000
A_23_P107283	2198.50000
A_23_P107295	361.00000
A_23_P107307	210.00000
A_23_P107313	601.00000
A_23_P107322	552.00000
A_23_P107336	117.00000
A_23_P107350	97.00000
A_23_P107351	1923.00000
A_23_P107369	10845.50000
A_23_P107373	1251.50000
A_23_P107394	8818.00000
A_23_P107401	5553.50000
A_23_P107412	9993.00000
A_23_P107421	39980.20000
A_23_P10743	170.00000
A_23_P107432	463.50000
A_23_P107443	79.00000
A_23_P107454	195.00000
A_23_P107465	147.00000
A_23_P107483	110.00000
A_23_P107507	669.00000
A_23_P107513	336.00000
A_23_P10753	87.50000
A_23_P107531	85.00000
A_23_P107552	473.00000
A_23_P107565	86.00000
A_23_P107578	98.00000
A_23_P107587	688.50000
A_23_P107597	104.00000
A_23_P107612	120.50000
A_23_P107623	80.00000
A_23_P107644	23579.60000
A_23_P107653	12829.00000
A_23_P107661	2474.00000
A_23_P107673	115.50000
A_23_P107684	419.00000
A_23_P107693	195.00000
A_23_P107701	1687.50000
A_23_P107714	286.50000
A_23_P107724	255.00000
A_23_P107735	640.00000
A_23_P107744	125.50000
A_23_P107750	81.00000
A_23_P107763	886.00000
A_23_P107775	129.00000
A_23_P107795	4580.50000
A_23_P107801	632.00000
A_23_P107847	247.50000
A_23_P10785	459.00000
A_23_P107855	193.00000
A_23_P107881	157.50000
A_23_P107894	537.00000
A_23_P107903	577.00000
A_23_P107911	184.00000
A_23_P107933	237.00000
A_23_P107942	414.00000
A_23_P107959	3037.50000

A_23_P107963	186.50000
A_23_P107974	89.00000
A_23_P10798	162.50000
A_23_P107981	121.00000
A_23_P107994	1819.00000
A_23_P108028	688.50000
A_23_P108042	110.00000
A_23_P108054	589.00000
A_23_P108062	116.50000
A_23_P108075	167.50000
A_23_P108082	231.00000
A_23_P108103	1160.00000
A_23_P108129	169.00000
A_23_P108135	7576.00000
A_23_P108143	2295.00000
A_23_P10815	3103.00000
A_23_P108157	133.00000
A_23_P108170	148.00000
A_23_P108180	83.00000
A_23_P108200	141.00000
A_23_P108216	90.00000
A_23_P108221	89.00000
A_23_P108244	6670.50000
A_23_P108265	128.00000
A_23_P108280	154.00000
A_23_P108294	716.00000
A_23_P1083	98.00000
A_23_P108303	6402.00000
A_23_P108314	121.00000
A_23_P108326	843.00000
A_23_P108331	6608.50000
A_23_P108342	164.50000
A_23_P108376	716.00000
A_23_P10839	1309.00000
A_23_P108394	1200.00000
A_23_P108404	719.50000
A_23_P108415	10913.50000
A_23_P108427	287.00000
A_23_P108437	1457.00000
A_23_P108463	185.50000
A_23_P108492	112.00000
A_23_P108501	361.00000
A_23_P108514	263.00000
A_23_P108522	2978.00000
A_23_P108534	99.00000
A_23_P108546	86.00000
A_23_P108554	11833.00000
A_23_P108564	91.00000
A_23_P108574	958.00000
A_23_P10858	512.00000
A_23_P108592	93.00000
A_23_P108604	2259.00000
A_23_P108641	7607.00000
A_23_P108657	361.00000
A_23_P108662	5877.00000
A_23_P108673	534.50000
A_23_P108699	92.50000
A_23_P10870	658.50000
A_23_P108708	6451.50000
A_23_P10873	184.00000

A_23_P108734	86.00000
A_23_P108743	88.00000
A_23_P108751	13299.00000
A_23_P108761	1027.50000
A_23_P108785	4759.00000
A_23_P108819	88.00000
A_23_P108823	704.00000
A_23_P108835	1003.00000
A_23_P108842	1044.50000
A_23_P10885	124.00000
A_23_P108871	1829.00000
A_23_P108883	131.00000
A_23_P108911	108.00000
A_23_P108922	188.00000
A_23_P108932	334.50000
A_23_P108948	814.50000
A_23_P108970	97.50000
A_23_P108990	91.00000
A_23_P108994	2884.50000
A_23_P109001	182.50000
A_23_P109017	1016.00000
A_23_P10902	223.00000
A_23_P109026	1402.50000
A_23_P109034	1230.00000
A_23_P109055	120.00000
A_23_P109072	1900.00000
A_23_P10911	229.00000
A_23_P109122	1343.00000
A_23_P109133	126.00000
A_23_P109143	4631.05000
A_23_P109171	510.50000
A_23_P109184	128.00000
A_23_P109193	102.00000
A_23_P109201	12490.00000
A_23_P109224	116.00000
A_23_P109229	89.50000
A_23_P109235	1145.00000
A_23_P109254	4757.50000
A_23_P109269	661.00000
A_23_P10927	161.00000
A_23_P109286	103.00000
A_23_P109304	204.00000
A_23_P109320	218.00000
A_23_P109322	653.00000
A_23_P109333	5091.00000
A_23_P109345	11680.50000
A_23_P10936	84.00000
A_23_P109382	82.50000
A_23_P109393	156.00000
A_23_P109410	318.00000
A_23_P109420	934.00000
A_23_P109427	660.00000
A_23_P109436	368.00000
A_23_P109442	2632.00000
A_23_P109446	989.50000
A_23_P109452	645.50000
A_23_P10947	108.50000
A_23_P109470	522.00000
A_23_P109488	120.00000
A_23_P109508	131.00000

A_23_P109547	598.00000
A_23_P10956	98.50000
A_23_P109593	530.00000
A_23_P109606	856.50000
A_23_P109614	76.00000
A_23_P109636	1501.00000
A_23_P109643	353.50000
A_23_P109655	532.00000
A_23_P10966	139.00000
A_23_P109677	10353.00000
A_23_P109682	1011.00000
A_23_P109720	82.00000
A_23_P109733	651.00000
A_23_P109768	10573.50000
A_23_P109774	690.00000
A_23_P109785	100.00000
A_23_P109794	112.00000
A_23_P10980	147.00000
A_23_P109812	98.00000
A_23_P109821	9566.00000
A_23_P109843	88.00000
A_23_P109864	195.00000
A_23_P10987	445.00000
A_23_P109877	572.50000
A_23_P109881	453.00000
A_23_P109895	1230.00000
A_23_P109907	29397.50000
A_23_P109913	76.50000
A_23_P109928	9560.00000
A_23_P109934	291.00000
A_23_P10995	92.00000
A_23_P109950	282.00000
A_23_P109964	98.50000
A_23_P109974	278.00000
A_23_P109988	323.50000
A_23_P110005	665.00000
A_23_P110022	320.50000
A_23_P110031	454.00000
A_23_P11005	3057.00000
A_23_P110052	384.00000
A_23_P110062	1300.00000
A_23_P110076	606.00000
A_23_P110090	111.00000
A_23_P110108	110.00000
A_23_P110116	326.00000
A_23_P110122	1629.50000
A_23_P110135	94.00000
A_23_P110151	124.00000
A_23_P110167	2651.00000
A_23_P11017	220.00000
A_23_P110175	91.00000
A_23_P110184	604.00000
A_23_P110196	240.00000
A_23_P1102	246.00000
A_23_P110204	102.00000
A_23_P110212	921.00000
A_23_P110234	102.50000
A_23_P110243	646.50000
A_23_P11025	289.50000
A_23_P110253	177.70000



A_23_P110266	127.00000
A_23_P110276	219.00000
A_23_P110288	148.00000
A_23_P110299	97.00000
A_23_P110304	189.50000
A_23_P110319	82.00000
A_23_P11032	161.00000
A_23_P110345	650.00000
A_23_P110362	747.00000
A_23_P110386	86.00000
A_23_P110403	519.00000
A_23_P110412	126.00000
A_23_P110430	197.00000
A_23_P110433	2014.50000
A_23_P110445	618.50000
A_23_P110462	114.00000
A_23_P110473	686.00000
A_23_P110492	1254.50000
A_23_P110504	4358.50000
A_23_P11051	153.00000
A_23_P110531	6683.00000
A_23_P110557	113.50000
A_23_P110569	235.50000
A_23_P110571	560.50000
A_23_P110585	542.00000
A_23_P110598	484.00000
A_23_P110606	448.50000
A_23_P110611	532.00000
A_23_P110624	1133.00000
A_23_P110643	267.00000
A_23_P110655	1192.00000
A_23_P110661	5500.00000
A_23_P110686	2578.50000
A_23_P110699	132.00000
A_23_P11070	98.00000
A_23_P110704	2933.50000
A_23_P11071	2900.00000
A_23_P110712	1778.00000
A_23_P110725	516.50000
A_23_P110764	71.00000
A_23_P110777	84.00000
A_23_P110787	217.00000
A_23_P110791	2032.00000
A_23_P110802	1734.50000
A_23_P11081	81.00000
A_23_P110811	25732.70000
A_23_P110837	419.00000
A_23_P110846	981.50000
A_23_P110851	732.20000
A_23_P110879	193.50000
A_23_P110882	978.50000
A_23_P110896	202.00000
A_23_P110903	126.00000
A_23_P110941	536.00000
A_23_P110957	2094.50000
A_23_P110961	3224.00000
A_23_P111000	2566.00000
A_23_P111005	3314.50000
A_23_P111020	128.00000
A_23_P11103	92.00000

A_23_P111037	6260.00000
A_23_P111041	1338.00000
A_23_P111054	1210.00000
A_23_P111088	96.50000
A_23_P111092	2128.50000
A_23_P111112	5505.50000
A_23_P111126	201.00000
A_23_P111132	12475.50000
A_23_P111141	3038.00000
A_23_P111155	97.50000
A_23_P111171	355.00000
A_23_P111188	199.00000
A_23_P111119	82.00000
A_23_P111194	394.00000
A_23_P111206	223.50000
A_23_P111228	442.00000
A_23_P111240	491.00000
A_23_P111260	390.00000
A_23_P111267	236.50000
A_23_P111273	8034.50000
A_23_P111288	11071.00000
A_23_P111297	1321.00000
A_23_P111303	1120.00000
A_23_P111306	836.50000
A_23_P111311	232.00000
A_23_P111321	132.50000
A_23_P111343	1243.00000
A_23_P111360	242.00000
A_23_P111361	103.00000
A_23_P111373	1531.50000
A_23_P111381	916.50000
A_23_P111395	87.00000
A_23_P111402	80.00000
A_23_P111413	181.00000
A_23_P11144	103.50000
A_23_P111452	5570.00000
A_23_P111480	111.00000
A_23_P111481	11455.00000
A_23_P111487	364.00000
A_23_P111492	155.00000
A_23_P111506	9518.00000
A_23_P111517	110.00000
A_23_P111525	1124.00000
A_23_P111531	1521.00000
A_23_P111571	13044.00000
A_23_P111583	218.00000
A_23_P111593	161.00000
A_23_P11160	300.00000
A_23_P111604	90.00000
A_23_P111621	2416.50000
A_23_P111635	782.00000
A_23_P111657	91.00000
A_23_P111662	88.00000
A_23_P111672	321.00000
A_23_P111698	114.00000
A_23_P1117	116.50000
A_23_P111701	5163.00000
A_23_P111712	292.00000
A_23_P111724	88.00000
A_23_P111737	130.00000

A_23_P111745	1121.00000
A_23_P111753	7785.00000
A_23_P111766	6585.00000
A_23_P111797	1931.50000
A_23_P111804	430.00000
A_23_P111811	1234.00000
A_23_P111826	87.50000
A_23_P111835	5137.00000
A_23_P111843	7180.00000
A_23_P111860	823.00000
A_23_P111865	233.00000
A_23_P111888	1030.00000
A_23_P111919	114.00000
A_23_P11192	8159.00000
A_23_P111929	158.00000
A_23_P111947	80.00000
A_23_P111961	1465.50000
A_23_P111978	111.00000
A_23_P111981	237.00000
A_23_P111995	5391.95000
A_23_P112004	139.50000
A_23_P11201	95.00000
A_23_P112016	96.00000
A_23_P112026	452.00000
A_23_P112061	1822.00000
A_23_P112078	195.00000
A_23_P112086	77.00000
A_23_P112100	86.00000
A_23_P112103	373.50000
A_23_P112113	1467.00000
A_23_P112135	4675.00000
A_23_P11214	1209.00000
A_23_P112159	839.50000
A_23_P112162	887.00000
A_23_P112173	75.00000
A_23_P112187	100.00000
A_23_P112201	493.00000
A_23_P112220	201.00000
A_23_P11224	2049.00000
A_23_P112241	1001.50000
A_23_P112251	3672.50000
A_23_P112260	1383.00000
A_23_P112275	86.00000
A_23_P112289	152.00000
A_23_P112296	100.00000
A_23_P112311	240.50000
A_23_P112327	88.50000

gRaw\_arrays\_scanner\_file2.txt

(+)E1A_r60_1	87.35938
(+)E1A_r60_3	88.62500
(+)E1A_r60_a104	88.32812
(+)E1A_r60_a107	86.28125
(+)E1A_r60_a135	87.53125
(+)E1A_r60_a20	94.57812
(+)E1A_r60_a22	103.20312
(+)E1A_r60_a97	86.03125
(+)E1A_r60_n11	89.70312
(+)E1A_r60_n9	89.60938
(+)eQC-39	85.40000
(+)eQC-40	85.35000

(+)eQC-41	85.70000
(+)eQC-42	86.25000
3xSLv1	86.34641
A_23_P100001	1529.00000
A_23_P100011	158.00000
A_23_P100022	151.00000
A_23_P100056	309.50000
A_23_P100074	1893.00000
A_23_P100092	439.00000
A_23_P100103	188.00000
A_23_P100111	145.00000
A_23_P100127	514.00000
A_23_P100133	193.00000
A_23_P100141	569.00000
A_23_P100156	262.00000
A_23_P100177	155.50000
A_23_P100189	120.50000
A_23_P100196	1204.00000
A_23_P100203	2258.00000
A_23_P100220	2036.50000
A_23_P100240	149.00000
A_23_P10025	202.00000
A_23_P100263	1342.00000
A_23_P100278	110.50000
A_23_P100292	9656.00000
A_23_P100315	3180.00000
A_23_P100326	4983.00000
A_23_P100341	10252.00000
A_23_P100344	1868.00000
A_23_P100355	3029.00000
A_23_P100386	99.00000
A_23_P100392	1002.50000
A_23_P100408	116.00000
A_23_P100413	265.00000
A_23_P100420	3611.50000
A_23_P100441	1490.50000
A_23_P100455	355.00000
A_23_P100469	449.00000
A_23_P100478	874.50000
A_23_P100486	11929.00000
A_23_P100499	161.00000
A_23_P100501	3245.00000
A_23_P100517	662.00000
A_23_P100522	4815.00000
A_23_P100539	416.00000
A_23_P100556	724.50000
A_23_P100576	5526.00000
A_23_P100583	102.00000
A_23_P100595	106.50000
A_23_P10060	89.50000
A_23_P100602	705.00000
A_23_P10062	104.00000
A_23_P100632	19371.00000
A_23_P100642	364.00000
A_23_P100654	1131.00000
A_23_P100660	4197.00000
A_23_P100676	434.00000
A_23_P100693	696.00000
A_23_P100704	651.00000
A_23_P100711	3928.50000

A_23_P100730	443.00000
A_23_P100754	235.00000
A_23_P100764	2998.00000
A_23_P10077	317.00000
A_23_P100779	360.50000
A_23_P100788	251.00000
A_23_P100795	442.00000
A_23_P100802	8185.50000
A_23_P10081	180.00000
A_23_P100868	2694.00000
A_23_P100872	111.00000
A_23_P100883	2810.50000
A_23_P10091	160.00000
A_23_P100912	213.00000
A_23_P100931	84.00000
A_23_P100935	88.00000
A_23_P100959	105.00000
A_23_P100963	244.00000
A_23_P100990	110.00000
A_23_P100991	88.00000
A_23_P101007	440.00000
A_23_P101013	1552.00000
A_23_P101025	351.00000
A_23_P101038	88.00000
A_23_P101048	93.00000
A_23_P101054	172.00000
A_23_P101073	107.00000
A_23_P101084	101.00000
A_23_P101093	810.50000
A_23_P101111	917.00000
A_23_P101121	529.00000
A_23_P101131	97.00000
A_23_P101141	186.00000
A_23_P101185	4017.00000
A_23_P101193	500.00000
A_23_P101208	3307.50000
A_23_P10121	3521.00000
A_23_P101237	1736.00000
A_23_P101240	16751.50000
A_23_P101246	393.00000
A_23_P101253	366.00000
A_23_P101258	227.00000
A_23_P10127	7056.00000
A_23_P101272	1378.00000
A_23_P101281	506.00000
A_23_P101297	322.00000
A_23_P101303	1216.00000
A_23_P101308	259.00000
A_23_P101319	141.00000
A_23_P101321	199.00000
A_23_P101332	2504.50000
A_23_P101342	278.00000
A_23_P10135	622.50000
A_23_P101351	691.00000
A_23_P101374	213.00000
A_23_P101380	523.00000
A_23_P101392	325.50000
A_23_P1014	1142.50000
A_23_P101407	8634.00000
A_23_P101427	194.50000

A_23_P101434	111.50000
A_23_P101461	6493.00000
A_23_P101476	179.00000
A_23_P101480	365.00000
A_23_P101505	781.00000
A_23_P101516	181.00000
A_23_P101521	86.00000
A_23_P101532	78989.50000
A_23_P101551	2751.00000
A_23_P10156	403.50000
A_23_P101564	95.00000
A_23_P101573	91.00000
A_23_P101615	267.00000
A_23_P101623	139.00000
A_23_P101636	88.00000
A_23_P101642	914.00000
A_23_P101655	1222.00000
A_23_P101671	231.00000
A_23_P101683	95.00000
A_23_P101699	583.00000
A_23_P101707	1774.00000
A_23_P10172	87.00000
A_23_P101737	397.50000
A_23_P101742	1636.00000
A_23_P101759	239.00000
A_23_P101761	783.50000
A_23_P101774	99.50000
A_23_P101783	132.00000
A_23_P101796	441.50000
A_23_P101806	884.00000
A_23_P101811	278.00000
A_23_P10182	626.00000
A_23_P101829	208.00000
A_23_P101871	411.00000
A_23_P101893	178.00000
A_23_P101905	282.00000
A_23_P101908	196.00000
A_23_P10194	6206.50000
A_23_P101943	950.50000
A_23_P101950	11271.00000
A_23_P101960	6563.00000
A_23_P101972	170.50000
A_23_P101992	122.50000
A_23_P102000	3262.45000
A_23_P102017	98.00000
A_23_P102037	267.00000
A_23_P102058	331.00000
A_23_P10206	279.50000
A_23_P102060	1460.00000
A_23_P102071	871.50000
A_23_P102083	79.00000
A_23_P102109	2095.00000
A_23_P10211	411.00000
A_23_P102113	287.00000
A_23_P102117	125.00000
A_23_P102122	5754.00000
A_23_P102160	201.00000
A_23_P102172	90.50000
A_23_P102183	2351.50000
A_23_P102192	368.00000

A_23_P102202	10014.00000
A_23_P102235	5233.50000
A_23_P102242	607.00000
A_23_P102258	5643.00000
A_23_P102262	6370.50000
A_23_P102278	86.00000
A_23_P102286	85.50000
A_23_P10232	94.00000
A_23_P102320	1716.00000
A_23_P102331	97.00000
A_23_P102351	204.00000
A_23_P102364	2701.00000
A_23_P102391	436.50000
A_23_P102404	23606.70000
A_23_P102412	734.00000
A_23_P102420	42608.60000
A_23_P102439	137.00000
A_23_P102454	1965.00000
A_23_P102462	130.50000
A_23_P102471	3426.70000
A_23_P102481	93.00000
A_23_P102494	155.00000
A_23_P102508	1381.00000
A_23_P102517	1108.00000
A_23_P102523	285.50000
A_23_P102542	908.00000
A_23_P102551	96.50000
A_23_P102571	16045.00000
A_23_P102575	3276.50000
A_23_P102582	8677.50000
A_23_P102607	115.50000
A_23_P102611	9740.00000
A_23_P102622	299.00000
A_23_P102634	88.00000
A_23_P102681	151.00000
A_23_P102694	89.00000
A_23_P102706	235.00000
A_23_P102731	1053.50000
A_23_P102743	280.00000
A_23_P102759	147.00000
A_23_P102769	587.00000
A_23_P102770	1851.00000
A_23_P102816	231.00000
A_23_P102832	2282.00000
A_23_P102842	1789.00000
A_23_P102864	246.50000
A_23_P102876	12947.50000
A_23_P102884	134.00000
A_23_P102890	7696.00000
A_23_P1029	518.00000
A_23_P10291	132.00000
A_23_P102917	84.50000
A_23_P102919	95.00000
A_23_P102925	1514.00000
A_23_P102937	1543.00000
A_23_P102950	170.50000
A_23_P102965	588.00000
A_23_P102973	726.50000
A_23_P102988	199.00000
A_23_P102994	3405.00000

A_23_P103011	598.00000
A_23_P103034	91.50000
A_23_P103041	103.00000
A_23_P10305	246.00000
A_23_P103062	288.50000
A_23_P103070	2316.00000
A_23_P103084	184.00000
A_23_P103099	535.50000
A_23_P103104	523.00000
A_23_P103110	552.00000
A_23_P103120	3155.00000
A_23_P103131	2676.00000
A_23_P103149	5292.50000
A_23_P103172	2187.00000
A_23_P103180	654.00000
A_23_P103201	1966.00000
A_23_P103226	103.00000
A_23_P103232	6803.00000
A_23_P103248	555.00000
A_23_P103256	211.50000
A_23_P103269	121.00000
A_23_P103276	264.00000
A_23_P103282	9068.00000
A_23_P103310	118.00000
A_23_P103315	9739.00000
A_23_P103328	96.00000
A_23_P103334	207.00000
A_23_P103349	82.00000
A_23_P103361	1239.80000
A_23_P103371	132.00000
A_23_P103398	2493.00000
A_23_P103405	187.00000
A_23_P103414	4390.00000
A_23_P103424	93.00000
A_23_P103433	604.00000
A_23_P103442	3085.50000
A_23_P103454	11128.50000
A_23_P103465	157.00000
A_23_P103476	711.50000
A_23_P103486	220.00000
A_23_P103496	110.00000
A_23_P103503	512.00000
A_23_P103511	769.00000
A_23_P103522	83.50000
A_23_P103532	278.00000
A_23_P10356	92.00000
A_23_P103561	267.00000
A_23_P103571	147.00000
A_23_P103588	85.00000
A_23_P103601	1775.00000
A_23_P103617	239.00000
A_23_P103628	2886.00000
A_23_P103631	16078.00000
A_23_P103661	3051.00000
A_23_P103672	2843.00000
A_23_P103690	1144.00000
A_23_P103698	3361.00000
A_23_P103703	127.00000
A_23_P103720	1056.50000
A_23_P10374	3367.00000



A_23_P103743	89.00000
A_23_P103756	182.00000
A_23_P103765	90.00000
A_23_P103775	168.00000
A_23_P103787	1083.00000
A_23_P103795	646.00000
A_23_P1038	228.50000
A_23_P103803	90.00000
A_23_P103812	163.00000
A_23_P103824	1057.00000
A_23_P103837	812.00000
A_23_P10385	1080.10000
A_23_P103864	461.00000
A_23_P103877	842.00000
A_23_P103885	8737.50000
A_23_P103897	112.00000
A_23_P103905	1398.00000
A_23_P10391	395.00000
A_23_P103919	1694.00000
A_23_P103923	141.50000
A_23_P103932	499.00000
A_23_P103942	1552.50000
A_23_P103951	4855.50000
A_23_P103968	1369.00000
A_23_P103971	85.00000
A_23_P103981	21937.00000
A_23_P103996	621.00000
A_23_P10401	183.00000
A_23_P104012	100.00000
A_23_P104022	2247.00000
A_23_P104025	576.00000
A_23_P104046	462.00000
A_23_P104054	1592.00000
A_23_P104065	984.00000
A_23_P104073	217.00000
A_23_P104086	188.00000
A_23_P104098	111.00000
A_23_P104109	458.00000
A_23_P104116	22561.20000
A_23_P104138	206.00000
A_23_P104146	681.00000
A_23_P104151	426.00000
A_23_P104188	627.00000
A_23_P104193	2698.00000
A_23_P104199	1099.05000
A_23_P104201	5096.00000
A_23_P104224	223.00000
A_23_P104237	108.50000
A_23_P104252	223.00000
A_23_P104275	89.00000
A_23_P104282	277.00000
A_23_P104295	327.00000
A_23_P1043	659.00000
A_23_P104318	21250.40000
A_23_P104323	593.00000
A_23_P104335	86.00000
A_23_P104346	523.00000
A_23_P104351	2147.50000
A_23_P104362	6437.00000
A_23_P104372	6248.00000

A_23_P104387	3723.00000
A_23_P104413	12216.00000
A_23_P104442	833.00000
A_23_P104438	188.50000
A_23_P104445	181.00000
A_23_P104451	4958.50000
A_23_P104464	328.00000
A_23_P104471	1013.50000
A_23_P104484	85.00000
A_23_P104493	327.00000
A_23_P104509	134.50000
A_23_P104522	175.00000
A_23_P104555	108.00000
A_23_P104563	250.00000
A_23_P104579	695.00000
A_23_P10458	89.00000
A_23_P104583	452.00000
A_23_P104594	109.50000
A_23_P104607	2112.00000
A_23_P104617	254.00000
A_23_P104624	1234.00000
A_23_P10463	18052.50000
A_23_P104641	2316.00000
A_23_P104651	6061.00000
A_23_P104676	4245.00000
A_23_P104689	611.15000
A_23_P104692	841.00000
A_23_P104705	201.00000
A_23_P104734	4593.00000
A_23_P104741	257.00000
A_23_P104762	645.00000
A_23_P104798	178.45000
A_23_P104804	228.00000
A_23_P104819	94.00000
A_23_P104845	96.00000
A_23_P104853	92.50000
A_23_P104865	89.00000
A_23_P104876	1081.50000
A_23_P10488	159.00000
A_23_P104881	122.00000
A_23_P104892	11215.00000
A_23_P104942	3144.50000
A_23_P10497	504.00000
A_23_P104972	98.00000
A_23_P104996	141.50000
A_23_P10500	94.00000
A_23_P105002	625.50000
A_23_P105012	116.00000
A_23_P105028	1181.00000
A_23_P105044	2985.00000
A_23_P10506	118.00000
A_23_P105066	1241.00000
A_23_P105088	91.00000
A_23_P105118	98.50000
A_23_P105138	1479.50000
A_23_P105144	323.50000
A_23_P10518	145.00000
A_23_P105184	1385.50000
A_23_P105197	128.00000
A_23_P105212	107.00000

A_23_P105227	103.00000
A_23_P10525	91.00000
A_23_P105251	295.00000
A_23_P105264	350.50000
A_23_P105276	834.00000
A_23_P105307	175.00000
A_23_P105313	3022.00000
A_23_P105368	117.00000
A_23_P105382	230.50000
A_23_P105392	19263.30000
A_23_P105409	214.00000
A_23_P10542	132.00000
A_23_P105423	110.00000
A_23_P105436	139.00000
A_23_P105442	1165.00000
A_23_P105453	83.00000
A_23_P105461	107.00000
A_23_P105465	91.00000
A_23_P105475	118.00000
A_23_P105495	122.00000
A_23_P105519	1051.50000
A_23_P105524	88.50000
A_23_P105535	384.50000
A_23_P105545	107.00000
A_23_P105562	173.55000
A_23_P105571	989.50000
A_23_P105583	451.50000
A_23_P10559	561.50000
A_23_P105592	7722.00000
A_23_P1056	573.00000
A_23_P10561	79.50000
A_23_P105619	332.00000
A_23_P105625	1749.00000
A_23_P10564	79.00000
A_23_P105646	710.00000
A_23_P105651	82.00000
A_23_P105664	4715.00000
A_23_P105691	108.00000
A_23_P105705	87.00000
A_23_P105730	91.00000
A_23_P105732	6212.00000
A_23_P105747	385.00000
A_23_P105753	542.00000
A_23_P105794	133.00000
A_23_P105803	160.50000
A_23_P105815	230.50000
A_23_P105833	504.00000
A_23_P105856	94.00000
A_23_P105862	155.00000
A_23_P105873	82.00000
A_23_P105886	84.00000
A_23_P105900	8753.00000
A_23_P10591	6799.00000
A_23_P105923	125.50000
A_23_P105939	115.50000
A_23_P105957	3823.50000
A_23_P105963	126.50000
A_23_P105973	321.00000
A_23_P106	234.00000
A_23_P106002	9759.50000

A_23_P106016	277.00000
A_23_P106024	294.50000
A_23_P106042	100.00000
A_23_P10605	471.50000
A_23_P106056	4823.00000
A_23_P106069	92.00000
A_23_P106080	93.00000
A_23_P106103	95.50000
A_23_P106117	492.00000
A_23_P106127	1258.00000
A_23_P106131	5134.50000
A_23_P10614	285.00000
A_23_P106145	3915.50000
A_23_P106158	308.00000
A_23_P106162	415.50000
A_23_P106174	122.00000
A_23_P106194	4183.00000
A_23_P106204	666.00000
A_23_P106226	6296.00000
A_23_P106236	92.00000
A_23_P106241	2204.50000
A_23_P106258	148.00000
A_23_P106280	2366.00000
A_23_P106299	9023.00000
A_23_P106322	420.00000
A_23_P106362	218.50000
A_23_P106371	181.00000
A_23_P106389	112.50000
A_23_P106391	350.00000
A_23_P10640	113.50000
A_23_P106405	729.00000
A_23_P106412	1043.00000
A_23_P106425	152.00000
A_23_P106433	3784.50000
A_23_P106439	900.50000
A_23_P106463	3145.50000
A_23_P10647	347.00000
A_23_P106472	13987.00000
A_23_P106481	3911.50000
A_23_P106497	329.00000
A_23_P106505	475.50000
A_23_P106522	1803.00000
A_23_P106532	1738.50000
A_23_P106544	6108.50000
A_23_P106559	124.00000
A_23_P106562	800.00000
A_23_P106575	2951.00000
A_23_P106602	114.00000
A_23_P106617	656.00000
A_23_P106629	101.00000
A_23_P106633	2874.00000
A_23_P106656	89.00000
A_23_P106661	168.00000
A_23_P106663	105.00000
A_23_P106675	387.50000
A_23_P106682	8203.00000
A_23_P106694	2419.50000
A_23_P106708	122653.00000
A_23_P106720	318.50000
A_23_P106727	1749.00000

A_23_P106737	562.00000
A_23_P106741	13257.50000
A_23_P106761	971.00000
A_23_P106773	2713.50000
A_23_P106798	395.00000
A_23_P106806	124.00000
A_23_P106814	165.00000
A_23_P106822	2226.50000
A_23_P106835	1837.50000
A_23_P106844	12734.00000
A_23_P10685	2142.00000
A_23_P106859	5679.00000
A_23_P106874	187.00000
A_23_P106887	5389.50000
A_23_P106898	491.00000
A_23_P106906	207.00000
A_23_P106922	703.00000
A_23_P106933	107.50000
A_23_P106945	218.00000
A_23_P106973	17488.50000
A_23_P10699	257.00000
A_23_P106998	2052.00000
A_23_P10701	382.50000
A_23_P107036	2033.00000
A_23_P107048	719.50000
A_23_P107051	395.00000
A_23_P107064	120.00000
A_23_P107073	7968.00000
A_23_P107087	632.00000
A_23_P107102	88.00000
A_23_P107116	432.50000
A_23_P107132	85.50000
A_23_P107154	1460.50000
A_23_P107166	214.00000
A_23_P107173	109.00000
A_23_P1072	8917.50000
A_23_P107206	347.25000
A_23_P10721	85.00000
A_23_P107211	424.00000
A_23_P107214	1373.00000
A_23_P107238	120.00000
A_23_P107247	128.00000
A_23_P107257	884.00000
A_23_P107283	2094.00000
A_23_P107295	490.00000
A_23_P107307	285.00000
A_23_P107313	632.00000
A_23_P107322	531.50000
A_23_P107336	115.00000
A_23_P107350	105.00000
A_23_P107351	1867.00000
A_23_P107369	10675.00000
A_23_P107373	1301.00000
A_23_P107394	13076.00000
A_23_P107401	4592.00000
A_23_P107412	9927.00000
A_23_P107421	41261.40000
A_23_P10743	152.50000
A_23_P107432	493.00000
A_23_P107443	88.00000

A_23_P107454	195.00000
A_23_P107465	148.00000
A_23_P107483	118.00000
A_23_P107507	593.00000
A_23_P107513	344.00000
A_23_P10753	87.00000
A_23_P107531	89.00000
A_23_P107552	442.00000
A_23_P107565	91.00000
A_23_P107578	108.00000
A_23_P107587	695.00000
A_23_P107597	105.00000
A_23_P107612	126.00000
A_23_P107623	86.00000
A_23_P107644	21968.20000
A_23_P107653	14332.50000
A_23_P107661	2649.00000
A_23_P107673	106.00000
A_23_P107684	486.00000
A_23_P107693	203.50000
A_23_P107701	1611.00000
A_23_P107714	267.00000
A_23_P107724	294.00000
A_23_P107735	652.50000
A_23_P107744	135.00000
A_23_P107750	80.50000
A_23_P107763	859.00000
A_23_P107775	162.00000
A_23_P107795	4471.50000
A_23_P107801	649.50000
A_23_P107847	160.00000
A_23_P10785	470.50000
A_23_P107855	215.00000
A_23_P107881	153.00000
A_23_P107894	608.00000
A_23_P107903	577.00000
A_23_P107911	173.00000
A_23_P107933	252.00000
A_23_P107942	426.50000
A_23_P107959	3297.00000
A_23_P107963	192.00000
A_23_P107974	98.00000
A_23_P10798	182.00000
A_23_P107981	135.00000
A_23_P107994	2090.50000
A_23_P108028	747.00000
A_23_P108042	109.00000
A_23_P108054	613.50000
A_23_P108062	120.00000
A_23_P108075	160.00000
A_23_P108082	269.00000
A_23_P108103	1090.50000
A_23_P108129	141.00000
A_23_P108135	7905.00000
A_23_P108143	2794.00000
A_23_P10815	3240.00000
A_23_P108157	162.00000
A_23_P108170	162.00000
A_23_P108180	93.00000
A_23_P108200	162.50000

A_23_P108216	105.50000
A_23_P108221	90.50000
A_23_P108244	6832.00000
A_23_P108265	141.00000
A_23_P108280	172.00000
A_23_P108294	833.00000
A_23_P1083	99.50000
A_23_P108303	6150.00000
A_23_P108314	102.00000
A_23_P108326	1033.00000
A_23_P108331	7617.00000
A_23_P108342	177.00000
A_23_P108376	695.00000
A_23_P10839	1336.00000
A_23_P108394	1009.00000
A_23_P108404	731.50000
A_23_P108415	12676.00000
A_23_P108427	292.00000
A_23_P108437	1442.00000
A_23_P108463	205.00000
A_23_P108492	116.50000
A_23_P108501	373.00000
A_23_P108514	306.50000
A_23_P108522	2970.50000
A_23_P108534	122.00000
A_23_P108546	85.00000
A_23_P108554	12077.00000
A_23_P108564	90.00000
A_23_P108574	890.50000
A_23_P10858	500.00000
A_23_P108592	93.50000
A_23_P108604	2321.00000
A_23_P108641	7355.50000
A_23_P108657	364.00000
A_23_P108662	5713.00000
A_23_P108673	529.00000
A_23_P108699	105.00000
A_23_P10870	670.00000
A_23_P108708	6953.50000
A_23_P10873	170.00000
A_23_P108734	86.50000
A_23_P108743	95.00000
A_23_P108751	15079.50000
A_23_P108761	962.50000
A_23_P108785	4185.00000
A_23_P108819	108.00000
A_23_P108823	814.00000
A_23_P108835	995.00000
A_23_P108842	859.50000
A_23_P10885	123.00000
A_23_P108871	1767.00000
A_23_P108883	151.00000
A_23_P108911	107.00000
A_23_P108922	189.50000
A_23_P108932	284.50000
A_23_P108948	831.50000
A_23_P108970	100.00000
A_23_P108990	86.00000
A_23_P108994	2982.00000
A_23_P109001	191.00000

A_23_P109017	1068.50000
A_23_P10902	210.00000
A_23_P109026	1525.00000
A_23_P109034	1428.00000
A_23_P109055	148.00000
A_23_P109072	1862.00000
A_23_P10911	240.00000
A_23_P109122	1218.00000
A_23_P109133	109.00000
A_23_P109143	4229.90000
A_23_P109171	577.00000
A_23_P109184	127.00000
A_23_P109193	99.00000
A_23_P109201	11171.00000
A_23_P109224	131.00000
A_23_P109229	94.00000
A_23_P109235	1202.50000
A_23_P109254	4676.00000
A_23_P109269	708.50000
A_23_P10927	166.00000
A_23_P109286	84.00000
A_23_P109304	230.00000
A_23_P109320	210.00000
A_23_P109322	643.00000
A_23_P109333	5207.00000
A_23_P109345	11165.00000
A_23_P10936	92.00000
A_23_P109382	86.50000
A_23_P109393	164.50000
A_23_P109410	349.00000
A_23_P109420	1049.00000
A_23_P109427	768.00000
A_23_P109436	444.50000
A_23_P109442	2586.00000
A_23_P109446	1072.00000
A_23_P109452	674.00000
A_23_P10947	109.00000
A_23_P109470	547.00000
A_23_P109488	111.50000
A_23_P109508	137.00000
A_23_P109547	682.00000
A_23_P10956	99.00000
A_23_P109593	520.00000
A_23_P109606	946.00000
A_23_P109614	84.00000
A_23_P109636	2066.00000
A_23_P109643	434.50000
A_23_P109655	504.50000
A_23_P10966	134.00000
A_23_P109677	11509.00000
A_23_P109682	971.00000
A_23_P109720	81.00000
A_23_P109733	687.00000
A_23_P109768	10024.00000
A_23_P109774	565.00000
A_23_P109785	102.00000
A_23_P109794	123.00000
A_23_P10980	147.00000
A_23_P109812	98.00000
A_23_P109821	10514.00000



A_23_P109843	90.00000
A_23_P109864	217.00000
A_23_P10987	451.00000
A_23_P109877	532.50000
A_23_P109881	508.50000
A_23_P109895	1244.00000
A_23_P109907	28309.10000
A_23_P109913	83.00000
A_23_P109928	9720.00000
A_23_P109934	269.00000
A_23_P10995	98.00000
A_23_P109950	324.00000
A_23_P109964	102.50000
A_23_P109974	304.00000
A_23_P109988	263.00000
A_23_P110005	751.00000
A_23_P110022	360.00000
A_23_P110031	466.00000
A_23_P11005	2325.00000
A_23_P110052	405.00000
A_23_P110062	1380.50000
A_23_P110076	635.00000
A_23_P110090	104.00000
A_23_P110108	118.00000
A_23_P110116	270.00000
A_23_P110122	1662.00000
A_23_P110135	98.00000
A_23_P110151	124.50000
A_23_P110167	2512.00000
A_23_P11017	235.00000
A_23_P110175	100.00000
A_23_P110184	553.00000
A_23_P110196	250.50000
A_23_P1102	257.50000
A_23_P110204	94.00000
A_23_P110212	891.00000
A_23_P110234	116.00000
A_23_P110243	644.00000
A_23_P11025	290.00000
A_23_P110253	190.90000
A_23_P110266	126.50000
A_23_P110276	221.00000
A_23_P110288	155.00000
A_23_P110299	92.00000
A_23_P110304	183.50000
A_23_P110319	86.00000
A_23_P11032	144.50000
A_23_P110345	619.00000
A_23_P110362	772.00000
A_23_P110386	82.00000
A_23_P110403	458.00000
A_23_P110412	120.00000
A_23_P110430	227.00000
A_23_P110433	1836.00000
A_23_P110445	678.00000
A_23_P110462	91.50000
A_23_P110473	547.00000
A_23_P110492	1337.00000
A_23_P110504	4518.50000
A_23_P11051	144.00000

A_23_P110531	6440.00000
A_23_P110557	122.00000
A_23_P110569	238.00000
A_23_P110571	580.00000
A_23_P110585	553.00000
A_23_P110598	515.50000
A_23_P110606	457.50000
A_23_P110611	532.00000
A_23_P110624	1217.00000
A_23_P110643	240.00000
A_23_P110655	1209.00000
A_23_P110661	5973.00000
A_23_P110686	2857.00000
A_23_P110699	140.00000
A_23_P11070	100.00000
A_23_P110704	3060.50000
A_23_P11071	3228.00000
A_23_P110712	1698.00000
A_23_P110725	595.00000
A_23_P110764	84.00000
A_23_P110777	86.00000
A_23_P110787	214.00000
A_23_P110791	1791.00000
A_23_P110802	1718.00000
A_23_P11081	88.50000
A_23_P110811	24641.90000
A_23_P110837	405.50000
A_23_P110846	891.00000
A_23_P110851	739.95000
A_23_P110879	188.00000
A_23_P110882	1019.00000
A_23_P110896	202.00000
A_23_P110903	127.00000
A_23_P110941	564.00000
A_23_P110957	2052.50000
A_23_P110961	2985.00000
A_23_P111000	2627.50000
A_23_P111005	3877.00000
A_23_P111020	138.50000
A_23_P11103	89.00000
A_23_P111037	7396.00000
A_23_P111041	1626.00000
A_23_P111054	1300.00000
A_23_P111088	105.00000
A_23_P111092	1786.00000
A_23_P111112	5674.00000
A_23_P111126	173.00000
A_23_P111132	10760.00000
A_23_P111141	3176.00000
A_23_P111155	91.00000
A_23_P111171	327.50000
A_23_P111188	230.00000
A_23_P11119	90.00000
A_23_P111194	404.50000
A_23_P111206	244.50000
A_23_P111228	400.00000
A_23_P111240	500.50000
A_23_P111260	410.00000
A_23_P111267	243.00000
A_23_P111273	8366.00000

A_23_P111288	11451.00000
A_23_P111297	1349.50000
A_23_P111303	1168.00000
A_23_P111306	772.00000
A_23_P111311	250.00000
A_23_P111321	158.50000
A_23_P111343	1272.50000
A_23_P111360	230.50000
A_23_P111361	101.00000
A_23_P111373	1547.00000
A_23_P111381	813.50000
A_23_P111395	87.00000
A_23_P111402	82.50000
A_23_P111413	215.00000
A_23_P11144	98.50000
A_23_P111452	5614.00000
A_23_P111480	121.50000
A_23_P111481	11674.00000
A_23_P111487	360.00000
A_23_P111492	171.50000
A_23_P111506	16700.00000
A_23_P111517	125.00000
A_23_P111525	1122.00000
A_23_P111531	1694.00000
A_23_P111571	19618.00000
A_23_P111583	181.00000
A_23_P111593	162.00000
A_23_P11160	341.00000
A_23_P111604	95.00000
A_23_P111621	2592.50000
A_23_P111635	842.50000
A_23_P111657	96.00000
A_23_P111662	92.00000
A_23_P111672	348.00000
A_23_P111698	118.00000
A_23_P1117	126.00000
A_23_P111701	4467.00000
A_23_P111712	293.50000
A_23_P111724	89.00000
A_23_P111737	144.00000
A_23_P111745	1443.50000
A_23_P111753	6786.00000
A_23_P111766	6674.00000
A_23_P111797	1863.00000
A_23_P111804	430.00000
A_23_P111811	1205.00000
A_23_P111826	92.00000
A_23_P111835	4901.00000
A_23_P111843	8304.00000
A_23_P111860	897.00000
A_23_P111865	244.00000
A_23_P111888	1063.00000
A_23_P111919	104.50000
A_23_P11192	8605.00000
A_23_P111929	169.00000
A_23_P111947	75.50000
A_23_P111961	1552.00000
A_23_P111978	118.00000
A_23_P111981	246.00000
A_23_P111995	5810.90000

A_23_P112004	127.00000
A_23_P11201	94.00000
A_23_P112016	101.00000
A_23_P112026	465.00000
A_23_P112061	1670.00000
A_23_P112078	210.00000
A_23_P112086	84.00000
A_23_P112100	84.50000
A_23_P112103	365.50000
A_23_P112113	1628.50000
A_23_P112135	4607.00000
A_23_P11214	1178.00000
A_23_P112159	898.00000
A_23_P112162	859.00000
A_23_P112173	83.00000
A_23_P112187	116.00000
A_23_P112201	449.00000
A_23_P112220	219.50000
A_23_P11224	1903.50000
A_23_P112241	1002.00000
A_23_P112251	3550.00000
A_23_P112260	1360.50000
A_23_P112275	92.00000
A_23_P112289	144.00000
A_23_P112296	95.50000
A_23_P112311	243.00000
A_23_P112327	84.00000

rRaw\_arrays\_scanner\_file1.txt

(+)E1A_r60_1	157.2031
(+)E1A_r60_3	172.8438
(+)E1A_r60_a104	152.4531
(+)E1A_r60_a107	165.1406
(+)E1A_r60_a135	155.4844
(+)E1A_r60_a20	197.2188
(+)E1A_r60_a22	282.9375
(+)E1A_r60_a97	139.3906
(+)E1A_r60_n11	172.0000
(+)E1A_r60_n9	143.7500
(+)eQC-39	158.2000
(+)eQC-40	147.3000
(+)eQC-41	165.4000
(+)eQC-42	165.2500
3xSLv1	141.4150
A_23_P100001	1026.0000
A_23_P100011	885.0000
A_23_P100022	291.0000
A_23_P100056	533.0000
A_23_P100074	5038.0000
A_23_P100092	1750.0000
A_23_P100103	3320.5000
A_23_P100111	994.0000
A_23_P100127	418.0000
A_23_P100133	1148.0000
A_23_P100141	1599.5000
A_23_P100156	10831.0000
A_23_P100177	199.0000
A_23_P100189	232.0000
A_23_P100196	5813.0000
A_23_P100203	4554.0000
A_23_P100220	1355.0000

A_23_P100240	177.0000
A_23_P10025	226.0000
A_23_P100263	72679.9000
A_23_P100278	243.0000
A_23_P100292	23486.5000
A_23_P100315	11115.0000
A_23_P100326	15391.0000
A_23_P100341	28618.7000
A_23_P100344	1470.0000
A_23_P100355	32649.7000
A_23_P100386	235.5000
A_23_P100392	2911.0000
A_23_P100408	283.5000
A_23_P100413	1070.0000
A_23_P100420	6228.5000
A_23_P100441	6746.0000
A_23_P100455	1356.0000
A_23_P100469	2036.5000
A_23_P100478	3943.0000
A_23_P100486	132344.0000
A_23_P100499	1258.0000
A_23_P100501	70688.9000
A_23_P100517	5415.0000
A_23_P100522	26023.1000
A_23_P100539	1333.0000
A_23_P100556	11250.0000
A_23_P100576	45721.1000
A_23_P100583	244.0000
A_23_P100595	251.0000
A_23_P10060	192.5000
A_23_P100602	4288.0000
A_23_P10062	118.0000
A_23_P100632	155567.0000
A_23_P100642	360.0000
A_23_P100654	12462.0000
A_23_P100660	3875.0000
A_23_P100676	2357.0000
A_23_P100693	3157.5000
A_23_P100704	8289.5000
A_23_P100711	9958.0000
A_23_P100730	2201.0000
A_23_P100754	764.5000
A_23_P100764	20586.1000
A_23_P10077	1266.0000
A_23_P100779	1705.0000
A_23_P100788	2543.0000
A_23_P100795	1625.0000
A_23_P100802	41065.7000
A_23_P10081	318.0000
A_23_P100868	5587.0000
A_23_P100872	228.0000
A_23_P100883	14359.0000
A_23_P10091	225.0000
A_23_P100912	1264.0000
A_23_P100931	131.0000
A_23_P100935	146.0000
A_23_P100959	282.0000
A_23_P100963	653.0000
A_23_P100990	443.0000
A_23_P100991	121.0000

A_23_P101007	852.0000
A_23_P101013	24735.1000
A_23_P101025	15347.0000
A_23_P101038	141.0000
A_23_P101048	215.0000
A_23_P101054	231.0000
A_23_P101073	344.0000
A_23_P101084	258.0000
A_23_P101093	4378.0000
A_23_P101111	9688.0000
A_23_P101121	1031.0000
A_23_P101131	209.0000
A_23_P101141	750.0000
A_23_P101185	32875.9000
A_23_P101193	740.5000
A_23_P101208	38657.0000
A_23_P10121	1205.0000
A_23_P101237	13009.0000
A_23_P101240	72065.4000
A_23_P101246	2790.5000
A_23_P101253	1071.0000
A_23_P101258	787.0000
A_23_P10127	2893.0000
A_23_P101272	6017.0000
A_23_P101281	2425.0000
A_23_P101297	2397.0000
A_23_P101303	15739.0000
A_23_P101308	2601.5000
A_23_P101319	460.0000
A_23_P101321	898.0000
A_23_P101332	6079.0000
A_23_P101342	1522.0000
A_23_P10135	4580.5000
A_23_P101351	2987.0000
A_23_P101374	2682.0000
A_23_P101380	54048.6000
A_23_P101392	483.5000
A_23_P1014	5141.5000
A_23_P101407	42801.1000
A_23_P101427	734.0000
A_23_P101434	237.0000
A_23_P101461	79925.9000
A_23_P101476	443.0000
A_23_P101480	805.0000
A_23_P101505	409.0000
A_23_P101516	1643.0000
A_23_P101521	178.0000
A_23_P101532	574480.0000
A_23_P101551	14215.0000
A_23_P10156	3321.0000
A_23_P101564	214.0000
A_23_P101573	160.5000
A_23_P101615	2131.0000
A_23_P101623	432.0000
A_23_P101636	153.0000
A_23_P101642	840.0000
A_23_P101655	7308.0000
A_23_P101671	338.0000
A_23_P101683	193.5000
A_23_P101699	5178.0000

A_23_P101707	41872.0000
A_23_P10172	156.0000
A_23_P101737	1952.0000
A_23_P101742	9967.0000
A_23_P101759	576.5000
A_23_P101761	30958.7000
A_23_P101774	296.0000
A_23_P101783	609.0000
A_23_P101796	991.0000
A_23_P101806	906.0000
A_23_P101811	796.0000
A_23_P10182	10201.0000
A_23_P101829	4446.0000
A_23_P101871	362.0000
A_23_P101893	2274.0000
A_23_P101905	310.0000
A_23_P101908	686.0000
A_23_P10194	72193.2000
A_23_P101943	15575.5000
A_23_P101950	283223.0000
A_23_P101960	50602.6000
A_23_P101972	688.0000
A_23_P101992	12516.0000
A_23_P102000	176717.0000
A_23_P102017	238.0000
A_23_P102037	2446.0000
A_23_P102058	136.0000
A_23_P10206	178.0000
A_23_P102060	8455.0000
A_23_P102071	2597.0000
A_23_P102083	144.0000
A_23_P102109	63988.6000
A_23_P10211	785.0000
A_23_P102113	490.0000
A_23_P102117	260.0000
A_23_P102122	330494.0000
A_23_P102160	4127.0000
A_23_P102172	189.0000
A_23_P102183	5255.0000
A_23_P102192	1875.0000
A_23_P102202	14093.0000
A_23_P102235	12189.0000
A_23_P102242	5236.0000
A_23_P102258	45932.5000
A_23_P102262	27522.5000
A_23_P102278	151.0000
A_23_P102286	148.0000
A_23_P10232	175.0000
A_23_P102320	2469.0000
A_23_P102331	116.5000
A_23_P102351	325.0000
A_23_P102364	1345.5000
A_23_P102391	867.0000
A_23_P102404	76971.4000
A_23_P102412	3800.0000
A_23_P102420	251564.0000
A_23_P102439	553.0000
A_23_P102454	14393.5000
A_23_P102462	375.0000
A_23_P102471	4475.3500

A_23_P102481	154.0000
A_23_P102494	1340.0000
A_23_P102508	3056.0000
A_23_P102517	11571.0000
A_23_P102523	1779.0000
A_23_P102542	14413.5000
A_23_P102551	139.5000
A_23_P102571	29370.8000
A_23_P102575	7079.0000
A_23_P102582	198011.0000
A_23_P102607	192.5000
A_23_P102611	5072.5000
A_23_P102622	530.0000
A_23_P102634	145.0000
A_23_P102681	194.0000
A_23_P102694	317.5000
A_23_P102706	459.0000
A_23_P102731	3219.0000
A_23_P102743	734.0000
A_23_P102759	270.0000
A_23_P102769	1444.5000
A_23_P102770	14792.0000
A_23_P102816	778.0000
A_23_P102832	13085.0000
A_23_P102842	10243.5000
A_23_P102864	178.5000
A_23_P102876	72783.1000
A_23_P102884	551.0000
A_23_P102890	337376.0000
A_23_P1029	802.0000
A_23_P10291	337.5000
A_23_P102917	166.0000
A_23_P102919	168.0000
A_23_P102925	4101.5000
A_23_P102937	11714.0000
A_23_P102950	539.5000
A_23_P102965	5893.5000
A_23_P102973	6407.5000
A_23_P102988	606.0000
A_23_P102994	39207.5000
A_23_P103011	8013.0000
A_23_P103034	216.0000
A_23_P103041	294.0000
A_23_P10305	977.0000
A_23_P103062	3952.0000
A_23_P103070	18389.5000
A_23_P103084	3741.5000
A_23_P103099	669.0000
A_23_P103104	15668.5000
A_23_P103110	26396.7000
A_23_P103120	18445.0000
A_23_P103131	41842.5000
A_23_P103149	215895.0000
A_23_P103172	7815.0000
A_23_P103180	2099.0000
A_23_P103201	19671.8000
A_23_P103226	187.5000
A_23_P103232	62676.0000
A_23_P103248	899.0000
A_23_P103256	211.0000



A_23_P103269	147.0000
A_23_P103276	1552.0000
A_23_P103282	144398.0000
A_23_P103310	302.5000
A_23_P103315	68604.6000
A_23_P103328	498.0000
A_23_P103334	1654.0000
A_23_P103349	181.0000
A_23_P103361	638.9500
A_23_P103371	332.5000
A_23_P103398	80614.1000
A_23_P103405	814.0000
A_23_P103414	39197.7000
A_23_P103424	148.0000
A_23_P103433	5720.0000
A_23_P103442	12092.0000
A_23_P103454	60282.0000
A_23_P103465	382.0000
A_23_P103476	2542.0000
A_23_P103486	522.0000
A_23_P103496	413.0000
A_23_P103503	2482.0000
A_23_P103511	13665.5000
A_23_P103522	132.5000
A_23_P103532	1121.0000
A_23_P10356	569.0000
A_23_P103561	1403.0000
A_23_P103571	362.0000
A_23_P103588	240.0000
A_23_P103601	15612.5000
A_23_P103617	1090.0000
A_23_P103628	5511.0000
A_23_P103631	49471.9000
A_23_P103661	15346.0000
A_23_P103672	52033.1000
A_23_P103690	4582.0000
A_23_P103698	63206.9000
A_23_P103703	4152.0000
A_23_P103720	590.0000
A_23_P10374	17923.0000
A_23_P103743	149.0000
A_23_P103756	581.0000
A_23_P103765	228.0000
A_23_P103775	483.5000
A_23_P103787	5061.0000
A_23_P103795	484.0000
A_23_P1038	1615.0000
A_23_P103803	176.0000
A_23_P103812	258.5000
A_23_P103824	11106.0000
A_23_P103837	5340.0000
A_23_P10385	481.8000
A_23_P103864	1729.0000
A_23_P103877	546.5000
A_23_P103885	46665.0000
A_23_P103897	377.0000
A_23_P103905	10144.5000
A_23_P10391	243.0000
A_23_P103919	15004.5000
A_23_P103923	835.0000

A_23_P103932	641130.0000
A_23_P103942	8046.0000
A_23_P103951	5098.5000
A_23_P103968	31381.4000
A_23_P103971	237.5000
A_23_P103981	23855.2000
A_23_P103996	2265.0000
A_23_P10401	3215.5000
A_23_P104012	146.5000
A_23_P104022	3576.0000
A_23_P104025	952.0000
A_23_P104046	3496.0000
A_23_P104054	5125.0000
A_23_P104065	4212.0000
A_23_P104073	344.0000
A_23_P104086	869.0000
A_23_P104098	588.0000
A_23_P104109	1790.0000
A_23_P104116	103154.0000
A_23_P104138	366.0000
A_23_P104146	4082.0000
A_23_P104151	2837.0000
A_23_P104188	649.0000
A_23_P104193	52116.7000
A_23_P104199	25880.0500
A_23_P104201	52165.8000
A_23_P104224	312.0000
A_23_P104237	162.0000
A_23_P104252	286.0000
A_23_P104275	186.0000
A_23_P104282	1746.5000
A_23_P104295	2191.0000
A_23_P1043	374.0000
A_23_P104318	68103.2000
A_23_P104323	8650.0000
A_23_P104335	124.0000
A_23_P104346	6968.0000
A_23_P104351	35845.1000
A_23_P104362	74749.5000
A_23_P104372	19460.5000
A_23_P104387	65507.6000
A_23_P104413	428561.0000
A_23_P10442	17225.0000
A_23_P104438	356.0000
A_23_P104445	8424.5000
A_23_P104451	15215.0000
A_23_P104464	3115.0000
A_23_P104471	86469.0000
A_23_P104484	217.0000
A_23_P104493	4529.0000
A_23_P104509	642.0000
A_23_P104522	189.0000
A_23_P104555	258.0000
A_23_P104563	1846.0000
A_23_P104579	2238.0000
A_23_P10458	213.0000
A_23_P104583	10963.5000
A_23_P104594	365.0000
A_23_P104607	16456.5000
A_23_P104617	1391.0000

A_23_P104624	4593.0000
A_23_P10463	205099.0000
A_23_P104641	20318.0000
A_23_P104651	3701.5000
A_23_P104676	26259.1000
A_23_P104689	6098.3000
A_23_P104692	10556.0000
A_23_P104705	793.0000
A_23_P104734	24779.4000
A_23_P104741	301.0000
A_23_P104762	471.0000
A_23_P104798	6413.0000
A_23_P104804	705.0000
A_23_P104819	281.0000
A_23_P104845	243.0000
A_23_P104853	147.0000
A_23_P104865	159.0000
A_23_P104876	4950.5000
A_23_P10488	131.0000
A_23_P104881	271.5000
A_23_P104892	174385.0000
A_23_P104942	17654.5000
A_23_P10497	16847.5000
A_23_P104972	220.0000
A_23_P104996	1937.5000
A_23_P10500	224.5000
A_23_P105002	1738.0000
A_23_P105012	218.0000
A_23_P105028	5858.5000
A_23_P105044	15708.0000
A_23_P10506	44492.1000
A_23_P105066	15822.0000
A_23_P105088	226.0000
A_23_P105118	238.0000
A_23_P105138	19388.0000
A_23_P105144	1612.0000
A_23_P10518	255.0000
A_23_P105184	129296.0000
A_23_P105197	644.0000
A_23_P105212	146.0000
A_23_P105227	913.5000
A_23_P10525	141.5000
A_23_P105251	328.5000
A_23_P105264	6405.0000
A_23_P105276	3121.0000
A_23_P105307	1188.0000
A_23_P105313	23525.8000
A_23_P105368	359.0000
A_23_P105382	771.0000
A_23_P105392	68604.6000
A_23_P105409	1056.0000
A_23_P10542	228.0000
A_23_P105423	207.0000
A_23_P105436	605.0000
A_23_P105442	13908.0000
A_23_P105453	154.0000
A_23_P105461	706.0000
A_23_P105465	298.0000
A_23_P105475	181.0000
A_23_P105495	181.0000

A_23_P105519	5698.0000
A_23_P105524	184.0000
A_23_P105535	5387.5000
A_23_P105545	203.0000
A_23_P105562	9074.8500
A_23_P105571	4699.0000
A_23_P105583	1932.0000
A_23_P10559	3476.0000
A_23_P105592	31735.4000
A_23_P1056	1922.0000
A_23_P10561	167.0000
A_23_P105619	1041.5000
A_23_P105625	13093.0000
A_23_P10564	142.0000
A_23_P105646	3716.0000
A_23_P105651	149.0000
A_23_P105664	12450.5000
A_23_P105691	252.0000
A_23_P105705	163.0000
A_23_P105730	180.0000
A_23_P105732	13817.0000
A_23_P105747	1334.0000
A_23_P105753	2190.0000
A_23_P105794	400.5000
A_23_P105803	245.0000
A_23_P105815	426.0000
A_23_P105833	808.0000
A_23_P105856	574.0000
A_23_P105862	3026.0000
A_23_P105873	155.5000
A_23_P105886	175.5000
A_23_P105900	37359.2000
A_23_P10591	196231.0000
A_23_P105923	264.0000
A_23_P105939	176.5000
A_23_P105957	126642.0000
A_23_P105963	204.0000
A_23_P105973	256.5000
A_23_P106	1092.0000
A_23_P106002	118491.0000
A_23_P106016	298.0000
A_23_P106024	315.0000
A_23_P106042	225.0000
A_23_P10605	16953.0000
A_23_P106056	95583.0000
A_23_P106069	183.0000
A_23_P106080	208.0000
A_23_P106103	281.0000
A_23_P106117	368.0000
A_23_P106127	3700.0000
A_23_P106131	54220.7000
A_23_P10614	2138.5000
A_23_P106145	118265.0000
A_23_P106158	1079.0000
A_23_P106162	4101.0000
A_23_P106174	1525.0000
A_23_P106194	11377.0000
A_23_P106204	5599.0000
A_23_P106226	57504.5000
A_23_P106236	175.0000

A_23_P106241	18582.0000
A_23_P106258	774.5000
A_23_P106280	4297.0000
A_23_P106299	294102.0000
A_23_P106322	2006.0000
A_23_P106362	156068.0000
A_23_P106371	470.0000
A_23_P106389	1249.0000
A_23_P106391	368.0000
A_23_P10640	473.5000
A_23_P106405	1223.0000
A_23_P106412	611.0000
A_23_P106425	1458.0000
A_23_P106433	3852.0000
A_23_P106439	2323.0000
A_23_P106463	31435.5000
A_23_P10647	1120.5000
A_23_P106472	581033.0000
A_23_P106481	34773.4000
A_23_P106497	1874.0000
A_23_P106505	1068.5000
A_23_P106522	7045.0000
A_23_P106532	4552.0000
A_23_P106544	20399.3000
A_23_P106559	1530.0000
A_23_P106562	28490.9000
A_23_P106575	15279.5000
A_23_P106602	429.0000
A_23_P106617	576.0000
A_23_P106629	25644.6000
A_23_P106633	21613.5000
A_23_P106656	202.0000
A_23_P106661	601.0000
A_23_P106663	244.5000
A_23_P106675	20079.8000
A_23_P106682	4232.0000
A_23_P106694	26996.5000
A_23_P106708	641125.0000
A_23_P106720	1239.5000
A_23_P106727	5093.0000
A_23_P106737	1499.0000
A_23_P106741	87879.8000
A_23_P106761	7476.0000
A_23_P106773	13368.0000
A_23_P106798	1337.5000
A_23_P106806	225.0000
A_23_P106814	239.0000
A_23_P106822	3938.0000
A_23_P106835	15443.0000
A_23_P106844	641130.0000
A_23_P10685	14574.0000
A_23_P106859	30506.4000
A_23_P106874	3076.0000
A_23_P106887	13838.0000
A_23_P106898	3988.0000
A_23_P106906	518.0000
A_23_P106922	369.5000
A_23_P106933	157.0000
A_23_P106945	6657.5000
A_23_P106973	641130.0000

A_23_P10699	2509.0000
A_23_P106998	4463.0000
A_23_P10701	5437.0000
A_23_P107036	25880.5000
A_23_P107048	3500.0000
A_23_P107051	2339.0000
A_23_P107064	330.0000
A_23_P107073	58694.1000
A_23_P107087	1249.5000
A_23_P107102	133.5000
A_23_P107116	671.0000
A_23_P107132	126.0000
A_23_P107154	10429.0000
A_23_P107166	835.0000
A_23_P107173	206.0000
A_23_P1072	169110.0000
A_23_P107206	5486.9500
A_23_P10721	158.0000
A_23_P107211	5551.0000
A_23_P107214	27104.6000
A_23_P107238	221.0000
A_23_P107247	1041.0000
A_23_P107257	3711.0000
A_23_P107283	1787.5000
A_23_P107295	1530.0000
A_23_P107307	2264.0000
A_23_P107313	6076.0000
A_23_P107322	2596.0000
A_23_P107336	1583.0000
A_23_P107350	375.5000
A_23_P107351	1581.0000
A_23_P107369	113310.0000
A_23_P107373	8772.0000
A_23_P107394	467608.0000
A_23_P107401	417092.0000
A_23_P107412	193242.0000
A_23_P107421	62853.0000
A_23_P10743	2866.0000
A_23_P107432	697.0000
A_23_P107443	119.0000
A_23_P107454	488.0000
A_23_P107465	957.0000
A_23_P107483	463.5000
A_23_P107507	3712.0000
A_23_P107513	1234.0000
A_23_P10753	129.0000
A_23_P107531	203.0000
A_23_P107552	3521.0000
A_23_P107565	183.0000
A_23_P107578	149.0000
A_23_P107587	24164.9000
A_23_P107597	199.5000
A_23_P107612	131.0000
A_23_P107623	129.0000
A_23_P107644	50052.0000
A_23_P107653	63325.4000
A_23_P107661	35319.1000
A_23_P107673	459.0000
A_23_P107684	1991.0000
A_23_P107693	2817.0000

A_23_P107701	21569.3000
A_23_P107714	1793.0000
A_23_P107724	1255.0000
A_23_P107735	18871.5000
A_23_P107744	162.0000
A_23_P107750	142.0000
A_23_P107763	6466.0000
A_23_P107775	388.0000
A_23_P107795	50366.6000
A_23_P107801	3165.5000
A_23_P107847	10252.0000
A_23_P10785	7482.5000
A_23_P107855	687.0000
A_23_P107881	634.5000
A_23_P107894	6156.0000
A_23_P107903	3229.0000
A_23_P107911	447.0000
A_23_P107933	2178.0000
A_23_P107942	1480.0000
A_23_P107959	27724.0000
A_23_P107963	284.5000
A_23_P107974	276.0000
A_23_P10798	523.0000
A_23_P107981	207.0000
A_23_P107994	12039.0000
A_23_P108028	956.5000
A_23_P108042	169.0000
A_23_P108054	2072.0000
A_23_P108062	391.5000
A_23_P108075	239.5000
A_23_P108082	224.0000
A_23_P108103	4020.0000
A_23_P108129	792.0000
A_23_P108135	158379.0000
A_23_P108143	3818.0000
A_23_P10815	34547.3000
A_23_P108157	461.5000
A_23_P108170	176.0000
A_23_P108180	268.0000
A_23_P108200	342.0000
A_23_P108216	148.0000
A_23_P108221	171.0000
A_23_P108244	72906.0000
A_23_P108265	401.0000
A_23_P108280	204.0000
A_23_P108294	1623.5000
A_23_P1083	245.0000
A_23_P108303	48626.4000
A_23_P108314	412.0000
A_23_P108326	1382.0000
A_23_P108331	63905.0000
A_23_P108342	470.5000
A_23_P108376	11221.0000
A_23_P10839	12405.0000
A_23_P108394	8104.5000
A_23_P108404	440.5000
A_23_P108415	63413.4000
A_23_P108427	239.0000
A_23_P108437	2132.0000
A_23_P108463	419.0000

A_23_P108492	235.0000
A_23_P108501	279.0000
A_23_P108514	2295.0000
A_23_P108522	46148.8000
A_23_P108534	189.5000
A_23_P108546	134.0000
A_23_P108554	43307.4000
A_23_P108564	167.0000
A_23_P108574	2927.0000
A_23_P10858	3414.0000
A_23_P108592	324.5000
A_23_P108604	11053.0000
A_23_P108641	15631.5000
A_23_P108657	2758.0000
A_23_P108662	66505.5000
A_23_P108673	205.5000
A_23_P108699	281.0000
A_23_P10870	2607.5000
A_23_P108708	99048.7000
A_23_P10873	27822.3000
A_23_P108734	162.0000
A_23_P108743	182.0000
A_23_P108751	1319.0000
A_23_P108761	5517.0000
A_23_P108785	110577.0000
A_23_P108819	279.0000
A_23_P108823	460.0000
A_23_P108835	13926.0000
A_23_P108842	42953.4000
A_23_P10885	466.0000
A_23_P108871	5747.5000
A_23_P108883	235.0000
A_23_P108911	1857.5000
A_23_P108922	1890.0000
A_23_P108932	295.5000
A_23_P108948	65350.3000
A_23_P108970	234.5000
A_23_P108990	143.0000
A_23_P108994	27409.4000
A_23_P109001	480.0000
A_23_P109017	5986.0000
A_23_P10902	250.0000
A_23_P109026	15804.5000
A_23_P109034	10771.5000
A_23_P109055	368.0000
A_23_P109072	2206.0000
A_23_P10911	4075.0000
A_23_P109122	7362.5000
A_23_P109133	971.0000
A_23_P109143	45357.3200
A_23_P109171	282.5000
A_23_P109184	13896.5000
A_23_P109193	304.5000
A_23_P109201	163491.0000
A_23_P109224	473.0000
A_23_P109229	202.5000
A_23_P109235	11312.0000
A_23_P109254	30486.7000
A_23_P109269	838.0000
A_23_P10927	1231.0000



A_23_P109286	249.0000
A_23_P109304	10318.0000
A_23_P109320	251.0000
A_23_P109322	918.0000
A_23_P109333	44929.6000
A_23_P109345	77841.6000
A_23_P10936	161.0000
A_23_P109382	157.0000
A_23_P109393	467.0000
A_23_P109410	784.0000
A_23_P109420	13706.5000
A_23_P109427	1832.0000
A_23_P109436	1320.0000
A_23_P109442	11516.0000
A_23_P109446	4828.5000
A_23_P109452	1937.5000
A_23_P10947	1757.5000
A_23_P109470	6278.0000
A_23_P109488	3135.5000
A_23_P109508	4023.0000
A_23_P109547	6147.5000
A_23_P10956	312.5000
A_23_P109593	17987.5000
A_23_P109606	8239.5000
A_23_P109614	145.0000
A_23_P109636	1221.0000
A_23_P109643	5949.5000
A_23_P109655	2086.0000
A_23_P10966	203.0000
A_23_P109677	25433.2000
A_23_P109682	5832.0000
A_23_P109720	166.5000
A_23_P109733	2017.0000
A_23_P109768	67690.2000
A_23_P109774	5488.0000
A_23_P109785	137.0000
A_23_P109794	275.0000
A_23_P10980	121.0000
A_23_P109812	245.0000
A_23_P109821	86714.8000
A_23_P109843	230.0000
A_23_P109864	7006.0000
A_23_P10987	1538.0000
A_23_P109877	6743.0000
A_23_P109881	2299.0000
A_23_P109895	8394.0000
A_23_P109907	164592.0000
A_23_P109913	147.0000
A_23_P109928	37496.8000
A_23_P109934	991.5000
A_23_P10995	213.0000
A_23_P109950	815.0000
A_23_P109964	290.5000
A_23_P109974	9707.0000
A_23_P109988	13178.5000
A_23_P110005	5499.0000
A_23_P110022	462.0000
A_23_P110031	13664.0000
A_23_P11005	103827.0000
A_23_P110052	219.0000

A_23_P110062	11436.0000
A_23_P110076	1714.0000
A_23_P110090	185.0000
A_23_P110108	823.0000
A_23_P110116	27792.8000
A_23_P110122	11866.5000
A_23_P110135	242.0000
A_23_P110151	495.0000
A_23_P110167	41498.3000
A_23_P11017	193.0000
A_23_P110175	448.0000
A_23_P110184	4009.0000
A_23_P110196	740.0000
A_23_P1102	310.0000
A_23_P110204	262.0000
A_23_P110212	87929.0000
A_23_P110234	351.5000
A_23_P110243	3476.5000
A_23_P11025	1820.5000
A_23_P110253	155.6000
A_23_P110266	164.5000
A_23_P110276	277.0000
A_23_P110288	287.5000
A_23_P110299	308.0000
A_23_P110304	1644.0000
A_23_P110319	168.0000
A_23_P11032	5280.0000
A_23_P110345	6105.0000
A_23_P110362	10317.5000
A_23_P110386	150.0000
A_23_P110403	162.5000
A_23_P110412	188.0000
A_23_P110430	321.5000
A_23_P110433	7180.0000
A_23_P110445	4310.0000
A_23_P110462	486.0000
A_23_P110473	2437.5000
A_23_P110492	6590.0000
A_23_P110504	33559.2000
A_23_P11051	761.0000
A_23_P110531	2803.0000
A_23_P110557	404.0000
A_23_P110569	719.0000
A_23_P110571	2504.0000
A_23_P110585	2999.0000
A_23_P110598	2065.0000
A_23_P110606	1889.5000
A_23_P110611	3036.0000
A_23_P110624	637.0000
A_23_P110643	2656.0000
A_23_P110655	3974.0000
A_23_P110661	21815.1000
A_23_P110686	4050.0000
A_23_P110699	241.0000
A_23_P11070	161.0000
A_23_P110704	37713.1000
A_23_P11071	13364.0000
A_23_P110712	39895.8000
A_23_P110725	2942.0000
A_23_P110764	123.5000

A_23_P110777	148.0000
A_23_P110787	3237.0000
A_23_P110791	255350.0000
A_23_P110802	1298.5000
A_23_P11081	123.0000
A_23_P110811	253398.0000
A_23_P110837	392.5000
A_23_P110846	7032.5000
A_23_P110851	695.1500
A_23_P110879	1965.0000
A_23_P110882	3539.0000
A_23_P110896	8692.5000
A_23_P110903	181.0000
A_23_P110941	663.5000
A_23_P110957	984.5000
A_23_P110961	73579.5000
A_23_P111000	26495.0000
A_23_P111005	23270.2000
A_23_P111020	707.0000
A_23_P11103	187.0000
A_23_P111037	34429.3000
A_23_P111041	5618.0000
A_23_P111054	3508.0000
A_23_P111088	296.0000
A_23_P111092	49029.5000
A_23_P111112	19614.0000
A_23_P111126	10783.0000
A_23_P111132	184246.0000
A_23_P111141	29149.6000
A_23_P111155	186.5000
A_23_P111171	18823.0000
A_23_P111188	1706.0000
A_23_P11119	113.0000
A_23_P111194	912.0000
A_23_P111206	1292.0000
A_23_P111228	1163.0000
A_23_P111240	5570.5000
A_23_P111260	499.0000
A_23_P111267	281.5000
A_23_P111273	13340.0000
A_23_P111288	96536.7000
A_23_P111297	996.0000
A_23_P111303	4315.0000
A_23_P111306	2487.0000
A_23_P111311	248.0000
A_23_P111321	746.0000
A_23_P111343	7714.0000
A_23_P111360	509.0000
A_23_P111361	267.5000
A_23_P111373	11099.0000
A_23_P111381	9310.5000
A_23_P111395	207.5000
A_23_P111402	111.0000
A_23_P111413	1090.0000
A_23_P11144	575.5000
A_23_P111452	112022.0000
A_23_P111480	187.5000
A_23_P111481	57027.7000
A_23_P111487	1464.0000
A_23_P111492	1089.0000

A_23_P111506	641125.0000
A_23_P111517	265.0000
A_23_P111525	5860.5000
A_23_P111531	970.0000
A_23_P111571	641130.0000
A_23_P111583	129075.0000
A_23_P111593	592.0000
A_23_P11160	586.0000
A_23_P111604	130.0000
A_23_P111621	12973.5000
A_23_P111635	8971.0000
A_23_P111657	229.0000
A_23_P111662	140.0000
A_23_P111672	2825.0000
A_23_P111698	415.0000
A_23_P1117	359.0000
A_23_P111701	700.0000
A_23_P111712	1257.0000
A_23_P111724	138.0000
A_23_P111737	234.0000
A_23_P111745	10695.0000
A_23_P111753	25561.0000
A_23_P111766	1685.0000
A_23_P111797	10323.0000
A_23_P111804	10018.0000
A_23_P111811	3234.0000
A_23_P111826	178.0000
A_23_P111835	38411.2000
A_23_P111843	72468.5000
A_23_P111860	283.0000
A_23_P111865	797.0000
A_23_P111888	379.0000
A_23_P111919	211.0000
A_23_P11192	20666.5000
A_23_P111929	300.0000
A_23_P111947	119.0000
A_23_P111961	3264.0000
A_23_P111978	508.0000
A_23_P111981	3633.5000
A_23_P111995	1631.4000
A_23_P112004	2137.0000
A_23_P11201	2928.0000
A_23_P112016	217.0000
A_23_P112026	393.0000
A_23_P112061	30998.0000
A_23_P112078	3301.0000
A_23_P112086	144.0000
A_23_P112100	141.0000
A_23_P112103	3525.0000
A_23_P112113	17602.0000
A_23_P112135	47825.1000
A_23_P11214	3070.0000
A_23_P112159	10531.0000
A_23_P112162	22257.5000
A_23_P112173	170.0000
A_23_P112187	289.0000
A_23_P112201	3067.0000
A_23_P112220	147.0000
A_23_P11224	28864.5000
A_23_P112241	47387.6000

A_23_P112251	86016.7000
A_23_P112260	27547.0000
A_23_P112275	161.5000
A_23_P112289	204.5000
A_23_P112296	153.0000
A_23_P112311	1649.5000
A_23_P112327	173.5000
rRaw_arrays_scanner_file2.txt	
(+)E1A_r60_1	153.7812
(+)E1A_r60_3	179.5312
(+)E1A_r60_a104	150.9531
(+)E1A_r60_a107	146.3750
(+)E1A_r60_a135	149.9844
(+)E1A_r60_a20	198.4688
(+)E1A_r60_a22	302.6875
(+)E1A_r60_a97	140.7031
(+)E1A_r60_n11	161.6094
(+)E1A_r60_n9	144.9688
(+)eQC-39	153.7000
(+)eQC-40	155.2000
(+)eQC-41	169.2000
(+)eQC-42	161.2500
3xSLv1	139.8137
A_23_P100001	1391.0000
A_23_P100011	1794.0000
A_23_P100022	456.0000
A_23_P100056	612.0000
A_23_P100074	9026.5000
A_23_P100092	2744.0000
A_23_P100103	4385.0000
A_23_P100111	1306.0000
A_23_P100127	485.0000
A_23_P100133	1011.5000
A_23_P100141	1402.0000
A_23_P100156	11903.0000
A_23_P100177	225.5000
A_23_P100189	258.0000
A_23_P100196	8358.0000
A_23_P100203	7320.0000
A_23_P100220	1299.5000
A_23_P100240	276.0000
A_23_P10025	447.0000
A_23_P100263	22883.7000
A_23_P100278	309.0000
A_23_P100292	28151.9000
A_23_P100315	9749.5000
A_23_P100326	18650.5000
A_23_P100341	24028.0000
A_23_P100344	1769.0000
A_23_P100355	38757.4000
A_23_P100386	251.0000
A_23_P100392	5730.0000
A_23_P100408	535.0000
A_23_P100413	1245.0000
A_23_P100420	7035.0000
A_23_P100441	8944.5000
A_23_P100455	1830.0000
A_23_P100469	3970.0000
A_23_P100478	4214.0000
A_23_P100486	146722.0000

A_23_P100499	810.0000
A_23_P100501	86398.2000
A_23_P100517	5971.0000
A_23_P100522	22804.9000
A_23_P100539	1420.0000
A_23_P100556	9328.5000
A_23_P100576	57107.7000
A_23_P100583	277.0000
A_23_P100595	306.0000
A_23_P10060	201.5000
A_23_P100602	4299.0000
A_23_P10062	116.5000
A_23_P100632	146900.0000
A_23_P100642	291.0000
A_23_P100654	11738.0000
A_23_P100660	4501.0000
A_23_P100676	2323.0000
A_23_P100693	3962.0000
A_23_P100704	7177.5000
A_23_P100711	7812.5000
A_23_P100730	1117.0000
A_23_P100754	1594.0000
A_23_P100764	23602.5000
A_23_P10077	1922.0000
A_23_P100779	1521.5000
A_23_P100788	2775.0000
A_23_P100795	2060.0000
A_23_P100802	44365.4000
A_23_P10081	419.0000
A_23_P100868	5934.0000
A_23_P100872	288.0000
A_23_P100883	16616.5000
A_23_P10091	160.0000
A_23_P100912	1421.0000
A_23_P100931	123.0000
A_23_P100935	164.5000
A_23_P100959	267.0000
A_23_P100963	672.0000
A_23_P100990	502.0000
A_23_P100991	119.0000
A_23_P101007	847.0000
A_23_P101013	20815.8000
A_23_P101025	14066.5000
A_23_P101038	154.5000
A_23_P101048	170.0000
A_23_P101054	234.0000
A_23_P101073	443.0000
A_23_P101084	295.0000
A_23_P101093	5436.0000
A_23_P101111	10624.0000
A_23_P101121	1849.0000
A_23_P101131	212.0000
A_23_P101141	882.0000
A_23_P101185	42085.7000
A_23_P101193	282.0000
A_23_P101208	36743.6000
A_23_P10121	1322.0000
A_23_P101237	14152.0000
A_23_P101240	41219.2000
A_23_P101246	3518.5000

A_23_P101253	1288.0000
A_23_P101258	999.0000
A_23_P10127	2694.0000
A_23_P101272	6241.0000
A_23_P101281	1854.0000
A_23_P101297	2476.5000
A_23_P101303	13725.5000
A_23_P101308	2400.0000
A_23_P101319	423.0000
A_23_P101321	1016.5000
A_23_P101332	8789.0000
A_23_P101342	1536.0000
A_23_P10135	6961.5000
A_23_P101351	3329.0000
A_23_P101374	2648.0000
A_23_P101380	40500.3000
A_23_P101392	620.0000
A_23_P1014	5934.0000
A_23_P101407	37984.4000
A_23_P101427	888.0000
A_23_P101434	234.0000
A_23_P101461	68555.1000
A_23_P101476	655.0000
A_23_P101480	745.0000
A_23_P101505	324.0000
A_23_P101516	1815.5000
A_23_P101521	173.5000
A_23_P101532	506057.0000
A_23_P101551	14817.5000
A_23_P10156	3589.5000
A_23_P101564	252.0000
A_23_P101573	198.5000
A_23_P101615	2114.0000
A_23_P101623	345.0000
A_23_P101636	174.0000
A_23_P101642	857.0000
A_23_P101655	9199.5000
A_23_P101671	450.0000
A_23_P101683	232.0000
A_23_P101699	4836.0000
A_23_P101707	46064.0000
A_23_P10172	144.0000
A_23_P101737	2250.5000
A_23_P101742	14727.0000
A_23_P101759	726.0000
A_23_P101761	9747.0000
A_23_P101774	361.0000
A_23_P101783	761.0000
A_23_P101796	966.5000
A_23_P101806	875.0000
A_23_P101811	871.0000
A_23_P10182	4393.0000
A_23_P101829	3562.0000
A_23_P101871	389.0000
A_23_P101893	2584.0000
A_23_P101905	250.0000
A_23_P101908	853.5000
A_23_P10194	93232.2000
A_23_P101943	11219.0000
A_23_P101950	227937.0000

A_23_P101960	66378.8000
A_23_P101972	913.5000
A_23_P101992	3994.0000
A_23_P102000	138131.6000
A_23_P102017	249.0000
A_23_P102037	3329.0000
A_23_P102058	147.0000
A_23_P10206	143.5000
A_23_P102060	8176.0000
A_23_P102071	3028.5000
A_23_P102083	130.0000
A_23_P102109	82794.1000
A_23_P10211	974.0000
A_23_P102113	522.0000
A_23_P102117	249.0000
A_23_P102122	336951.0000
A_23_P102160	5628.0000
A_23_P102172	199.0000
A_23_P102183	9158.0000
A_23_P102192	4173.0000
A_23_P102202	16373.0000
A_23_P102235	15043.0000
A_23_P102242	5730.5000
A_23_P102258	40884.4000
A_23_P102262	28019.0000
A_23_P102278	149.0000
A_23_P102286	150.5000
A_23_P10232	277.5000
A_23_P102320	3423.0000
A_23_P102331	181.0000
A_23_P102351	299.0000
A_23_P102364	973.0000
A_23_P102391	1931.5000
A_23_P102404	105118.0000
A_23_P102412	5914.5000
A_23_P102420	308423.0000
A_23_P102439	692.0000
A_23_P102454	10810.0000
A_23_P102462	361.5000
A_23_P102471	3670.1000
A_23_P102481	160.0000
A_23_P102494	1331.0000
A_23_P102508	5565.0000
A_23_P102517	13128.0000
A_23_P102523	1338.5000
A_23_P102542	14865.0000
A_23_P102551	117.5000
A_23_P102571	32002.2000
A_23_P102575	7001.5000
A_23_P102582	279404.0000
A_23_P102607	211.0000
A_23_P102611	3952.5000
A_23_P102622	494.0000
A_23_P102634	160.0000
A_23_P102681	197.0000
A_23_P102694	333.0000
A_23_P102706	523.0000
A_23_P102731	8602.0000
A_23_P102743	1099.0000
A_23_P102759	356.5000



A_23_P102769	1985.0000
A_23_P102770	19121.0000
A_23_P102816	904.5000
A_23_P102832	13781.0000
A_23_P102842	11566.0000
A_23_P102864	169.0000
A_23_P102876	76383.6000
A_23_P102884	754.0000
A_23_P102890	258601.0000
A_23_P1029	611.0000
A_23_P10291	450.5000
A_23_P102917	145.5000
A_23_P102919	148.0000
A_23_P102925	4943.0000
A_23_P102937	18830.0000
A_23_P102950	352.5000
A_23_P102965	7427.5000
A_23_P102973	6110.5000
A_23_P102988	863.0000
A_23_P102994	46211.7000
A_23_P103011	4308.0000
A_23_P103034	218.0000
A_23_P103041	341.0000
A_23_P10305	1535.0000
A_23_P103062	4954.5000
A_23_P103070	18062.0000
A_23_P103084	3021.0000
A_23_P103099	904.0000
A_23_P103104	16304.0000
A_23_P103110	21347.5000
A_23_P103120	22214.1000
A_23_P103131	35512.7000
A_23_P103149	202211.0000
A_23_P103172	10229.0000
A_23_P103180	2365.0000
A_23_P103201	21869.4000
A_23_P103226	242.0000
A_23_P103232	72119.8000
A_23_P103248	1403.0000
A_23_P103256	203.5000
A_23_P103269	154.0000
A_23_P103276	1458.5000
A_23_P103282	145910.0000
A_23_P103310	324.0000
A_23_P103315	45315.6000
A_23_P103328	192.0000
A_23_P103334	1860.0000
A_23_P103349	190.0000
A_23_P103361	971.2000
A_23_P103371	278.5000
A_23_P103398	91292.3000
A_23_P103405	569.0000
A_23_P103414	50150.6000
A_23_P103424	155.0000
A_23_P103433	4717.0000
A_23_P103442	20343.1000
A_23_P103454	81671.6000
A_23_P103465	616.0000
A_23_P103476	2945.5000
A_23_P103486	591.0000

A_23_P103496	437.0000
A_23_P103503	2338.0000
A_23_P103511	12753.0000
A_23_P103522	164.5000
A_23_P103532	1421.0000
A_23_P10356	550.5000
A_23_P103561	1403.0000
A_23_P103571	1072.5000
A_23_P103588	233.0000
A_23_P103601	23307.1000
A_23_P103617	676.0000
A_23_P103628	7617.0000
A_23_P103631	49028.0000
A_23_P103661	18960.5000
A_23_P103672	34995.8000
A_23_P103690	5718.0000
A_23_P103698	52317.0000
A_23_P103703	658.5000
A_23_P103720	551.0000
A_23_P10374	16482.0000
A_23_P103743	146.0000
A_23_P103756	1096.0000
A_23_P103765	182.0000
A_23_P103775	668.0000
A_23_P103787	5799.0000
A_23_P103795	844.0000
A_23_P1038	1577.0000
A_23_P103803	212.0000
A_23_P103812	277.0000
A_23_P103824	13538.0000
A_23_P103837	6713.0000
A_23_P10385	574.1500
A_23_P103864	2495.0000
A_23_P103877	462.0000
A_23_P103885	47821.8000
A_23_P103897	425.5000
A_23_P103905	13302.0000
A_23_P10391	249.0000
A_23_P103919	12884.5000
A_23_P103923	1043.5000
A_23_P103932	488677.0000
A_23_P103942	13871.5000
A_23_P103951	5921.0000
A_23_P103968	20029.0000
A_23_P103971	180.0000
A_23_P103981	44508.2000
A_23_P103996	6271.0000
A_23_P10401	3215.0000
A_23_P104012	149.5000
A_23_P104022	4702.0000
A_23_P104025	1468.0000
A_23_P104046	3387.0000
A_23_P104054	4559.0000
A_23_P104065	7115.0000
A_23_P104073	381.0000
A_23_P104086	997.0000
A_23_P104098	731.0000
A_23_P104109	2427.0000
A_23_P104116	105994.0000
A_23_P104138	296.0000

A_23_P104146	4513.0000
A_23_P104151	5251.0000
A_23_P104188	613.5000
A_23_P104193	61721.1000
A_23_P104199	29447.3400
A_23_P104201	69283.8000
A_23_P104224	251.0000
A_23_P104237	197.5000
A_23_P104252	210.0000
A_23_P104275	178.0000
A_23_P104282	2140.5000
A_23_P104295	2400.0000
A_23_P1043	376.0000
A_23_P104318	36571.3000
A_23_P104323	4975.0000
A_23_P104335	111.0000
A_23_P104346	8534.0000
A_23_P104351	39033.1000
A_23_P104362	70421.1000
A_23_P104372	22219.0000
A_23_P104387	66428.1000
A_23_P104413	235022.0000
A_23_P10442	25247.0000
A_23_P104438	467.0000
A_23_P104445	10507.5000
A_23_P104451	20362.8000
A_23_P104464	7293.0000
A_23_P104471	74473.2000
A_23_P104484	266.0000
A_23_P104493	10971.0000
A_23_P104509	939.0000
A_23_P104522	179.0000
A_23_P104555	304.0000
A_23_P104563	2227.0000
A_23_P104579	2875.0000
A_23_P10458	238.0000
A_23_P104583	10877.5000
A_23_P104594	368.0000
A_23_P104607	19155.0000
A_23_P104617	1369.0000
A_23_P104624	4042.0000
A_23_P10463	170090.0000
A_23_P104641	15746.0000
A_23_P104651	3844.0000
A_23_P104676	30835.3000
A_23_P104689	8135.3000
A_23_P104692	11238.0000
A_23_P104705	801.0000
A_23_P104734	31844.6000
A_23_P104741	337.5000
A_23_P104762	423.0000
A_23_P104798	7168.4000
A_23_P104804	647.0000
A_23_P104819	318.0000
A_23_P104845	284.0000
A_23_P104853	143.0000
A_23_P104865	165.0000
A_23_P104876	6656.5000
A_23_P10488	146.0000
A_23_P104881	263.0000

A_23_P104892	271230.0000
A_23_P104942	24332.0000
A_23_P10497	24513.4000
A_23_P104972	246.0000
A_23_P104996	2459.0000
A_23_P10500	362.0000
A_23_P105002	1795.5000
A_23_P105012	199.5000
A_23_P105028	9812.0000
A_23_P105044	18332.0000
A_23_P10506	13032.5000
A_23_P105066	16711.0000
A_23_P105088	201.0000
A_23_P105118	248.5000
A_23_P105138	27009.7000
A_23_P105144	816.5000
A_23_P10518	357.0000
A_23_P105184	86486.9000
A_23_P105197	904.0000
A_23_P105212	149.0000
A_23_P105227	1144.5000
A_23_P10525	176.0000
A_23_P105251	402.0000
A_23_P105264	7578.0000
A_23_P105276	3667.5000
A_23_P105307	1530.0000
A_23_P105313	28664.0000
A_23_P105368	236.0000
A_23_P105382	712.5000
A_23_P105392	95920.5000
A_23_P105409	1198.5000
A_23_P10542	522.0000
A_23_P105423	213.0000
A_23_P105436	705.0000
A_23_P105442	8074.0000
A_23_P105453	147.0000
A_23_P105461	2356.5000
A_23_P105465	885.5000
A_23_P105475	145.0000
A_23_P105495	199.5000
A_23_P105519	6045.0000
A_23_P105524	176.5000
A_23_P105535	6959.0000
A_23_P105545	314.0000
A_23_P105562	6933.9500
A_23_P105571	6830.0000
A_23_P105583	1828.0000
A_23_P10559	3480.0000
A_23_P105592	33789.5000
A_23_P1056	2546.0000
A_23_P10561	189.0000
A_23_P105619	1563.5000
A_23_P105625	20096.9000
A_23_P10564	133.0000
A_23_P105646	3979.0000
A_23_P105651	125.0000
A_23_P105664	16290.0000
A_23_P105691	298.0000
A_23_P105705	153.0000
A_23_P105730	174.0000

A_23_P105732	16170.0000
A_23_P105747	1686.0000
A_23_P105753	3098.0000
A_23_P105794	633.0000
A_23_P105803	238.5000
A_23_P105815	430.5000
A_23_P105833	1640.5000
A_23_P105856	572.0000
A_23_P105862	1777.0000
A_23_P105873	161.0000
A_23_P105886	159.0000
A_23_P105900	38718.0000
A_23_P10591	178696.0000
A_23_P105923	328.5000
A_23_P105939	192.0000
A_23_P105957	104251.0000
A_23_P105963	165.0000
A_23_P105973	218.0000
A_23_P106	1391.0000
A_23_P106002	224171.0000
A_23_P106016	295.0000
A_23_P106024	371.0000
A_23_P106042	266.0000
A_23_P10605	13843.5000
A_23_P106056	105413.0000
A_23_P106069	161.0000
A_23_P106080	250.0000
A_23_P106103	278.0000
A_23_P106117	332.0000
A_23_P106127	5191.0000
A_23_P106131	58688.2000
A_23_P10614	2471.0000
A_23_P106145	196342.0000
A_23_P106158	1399.0000
A_23_P106162	2072.0000
A_23_P106174	2479.0000
A_23_P106194	21574.0000
A_23_P106204	4691.0000
A_23_P106226	58968.8000
A_23_P106236	192.0000
A_23_P106241	21209.6000
A_23_P106258	906.0000
A_23_P106280	4583.0000
A_23_P106299	266686.0000
A_23_P106322	2244.0000
A_23_P106362	151833.0000
A_23_P106371	490.0000
A_23_P106389	856.0000
A_23_P106391	356.0000
A_23_P10640	438.0000
A_23_P106405	2549.5000
A_23_P106412	687.0000
A_23_P106425	1598.0000
A_23_P106433	5762.5000
A_23_P106439	2871.0000
A_23_P106463	34124.3000
A_23_P10647	571.0000
A_23_P106472	380288.0000
A_23_P106481	38885.4000
A_23_P106497	2313.5000

A_23_P106505	1610.5000
A_23_P106522	10578.0000
A_23_P106532	5074.5000
A_23_P106544	22573.5000
A_23_P106559	2944.0000
A_23_P106562	38530.9000
A_23_P106575	21347.5000
A_23_P106602	344.0000
A_23_P106617	503.0000
A_23_P106629	8033.0000
A_23_P106633	22918.1000
A_23_P106656	273.5000
A_23_P106661	634.0000
A_23_P106663	234.0000
A_23_P106675	25768.9000
A_23_P106682	2979.0000
A_23_P106694	30406.9000
A_23_P106708	527790.0000
A_23_P106720	1710.5000
A_23_P106727	4493.0000
A_23_P106737	1322.0000
A_23_P106741	94404.0000
A_23_P106761	10614.0000
A_23_P106773	19265.0000
A_23_P106798	1605.5000
A_23_P106806	290.0000
A_23_P106814	233.0000
A_23_P106822	5858.0000
A_23_P106835	13539.5000
A_23_P106844	629517.0000
A_23_P10685	13561.0000
A_23_P106859	37954.8000
A_23_P106874	5914.0000
A_23_P106887	18007.0000
A_23_P106898	4559.0000
A_23_P106906	472.0000
A_23_P106922	366.0000
A_23_P106933	215.5000
A_23_P106945	7868.0000
A_23_P106973	642136.0000
A_23_P10699	2551.0000
A_23_P106998	5598.0000
A_23_P10701	3830.5000
A_23_P107036	31529.5000
A_23_P107048	3327.0000
A_23_P107051	3129.0000
A_23_P107064	412.0000
A_23_P107073	48383.0000
A_23_P107087	1941.0000
A_23_P107102	144.0000
A_23_P107116	487.5000
A_23_P107132	141.5000
A_23_P107154	13269.5000
A_23_P107166	740.5000
A_23_P107173	294.5000
A_23_P1072	162640.0000
A_23_P107206	7453.7000
A_23_P10721	129.0000
A_23_P107211	8129.0000
A_23_P107214	33046.0000

A_23_P107238	223.0000
A_23_P107247	2251.0000
A_23_P107257	4091.0000
A_23_P107283	2306.0000
A_23_P107295	2496.0000
A_23_P107307	3504.0000
A_23_P107313	7352.0000
A_23_P107322	2726.0000
A_23_P107336	980.0000
A_23_P107350	636.0000
A_23_P107351	1512.0000
A_23_P107369	120292.0000
A_23_P107373	11401.0000
A_23_P107394	294588.0000
A_23_P107401	464433.0000
A_23_P107412	255672.0000
A_23_P107421	40076.9000
A_23_P10743	1939.0000
A_23_P107432	534.0000
A_23_P107443	117.0000
A_23_P107454	537.5000
A_23_P107465	1147.5000
A_23_P107483	637.0000
A_23_P107507	2909.0000
A_23_P107513	1359.0000
A_23_P10753	139.0000
A_23_P107531	199.0000
A_23_P107552	5213.0000
A_23_P107565	144.0000
A_23_P107578	272.0000
A_23_P107587	34700.3000
A_23_P107597	224.0000
A_23_P107612	146.0000
A_23_P107623	127.5000
A_23_P107644	48122.1000
A_23_P107653	64271.0500
A_23_P107661	45330.4000
A_23_P107673	366.0000
A_23_P107684	2505.0000
A_23_P107693	2392.5000
A_23_P107701	16359.0000
A_23_P107714	1616.0000
A_23_P107724	1285.5000
A_23_P107735	10510.5000
A_23_P107744	202.0000
A_23_P107750	145.5000
A_23_P107763	7162.0000
A_23_P107775	552.0000
A_23_P107795	56157.4000
A_23_P107801	2892.5000
A_23_P107847	6098.0000
A_23_P10785	10728.5000
A_23_P107855	708.0000
A_23_P107881	846.0000
A_23_P107894	7029.0000
A_23_P107903	2557.0000
A_23_P107911	636.0000
A_23_P107933	2303.0000
A_23_P107942	1915.0000
A_23_P107959	33371.0000

A_23_P107963	284.0000
A_23_P107974	288.0000
A_23_P10798	679.0000
A_23_P107981	257.0000
A_23_P107994	12170.0000
A_23_P108028	1697.0000
A_23_P108042	246.5000
A_23_P108054	2017.5000
A_23_P108062	414.0000
A_23_P108075	198.0000
A_23_P108082	218.0000
A_23_P108103	3451.0000
A_23_P108129	648.5000
A_23_P108135	164974.0000
A_23_P108143	3828.0000
A_23_P10815	37172.0000
A_23_P108157	522.0000
A_23_P108170	167.0000
A_23_P108180	308.0000
A_23_P108200	351.0000
A_23_P108216	154.0000
A_23_P108221	194.5000
A_23_P108244	61617.7000
A_23_P108265	562.0000
A_23_P108280	204.0000
A_23_P108294	1448.0000
A_23_P1083	248.0000
A_23_P108303	48540.6000
A_23_P108314	262.0000
A_23_P108326	2184.0000
A_23_P108331	68210.4000
A_23_P108342	501.0000
A_23_P108376	11268.0000
A_23_P10839	13372.0000
A_23_P108394	7727.0000
A_23_P108404	643.5000
A_23_P108415	74212.3000
A_23_P108427	294.0000
A_23_P108437	3280.0000
A_23_P108463	494.0000
A_23_P108492	340.0000
A_23_P108501	338.0000
A_23_P108514	2729.0000
A_23_P108522	46457.9000
A_23_P108534	267.0000
A_23_P108546	143.0000
A_23_P108554	70775.6000
A_23_P108564	156.0000
A_23_P108574	4203.0000
A_23_P10858	3408.0000
A_23_P108592	447.5000
A_23_P108604	24784.2000
A_23_P108641	25222.4000
A_23_P108657	3665.0000
A_23_P108662	80686.8000
A_23_P108673	186.0000
A_23_P108699	312.0000
A_23_P10870	3598.0000
A_23_P108708	103070.0000
A_23_P10873	35084.4000



A_23_P108734	183.5000
A_23_P108743	189.0000
A_23_P108751	1542.0000
A_23_P108761	8391.5000
A_23_P108785	150996.0000
A_23_P108819	319.0000
A_23_P108823	480.0000
A_23_P108835	18190.5000
A_23_P108842	31962.8000
A_23_P10885	500.0000
A_23_P108871	8448.0000
A_23_P108883	225.0000
A_23_P108911	2009.0000
A_23_P108922	2178.0000
A_23_P108932	268.0000
A_23_P108948	57851.1000
A_23_P108970	269.0000
A_23_P108990	149.0000
A_23_P108994	28713.2000
A_23_P109001	667.5000
A_23_P109017	4949.5000
A_23_P10902	238.0000
A_23_P109026	20205.2000
A_23_P109034	13820.0000
A_23_P109055	489.0000
A_23_P109072	1772.0000
A_23_P10911	4824.5000
A_23_P109122	3775.0000
A_23_P109133	657.0000
A_23_P109143	61898.3600
A_23_P109171	338.5000
A_23_P109184	18103.0000
A_23_P109193	338.0000
A_23_P109201	172990.0000
A_23_P109224	518.0000
A_23_P109229	205.0000
A_23_P109235	11679.5000
A_23_P109254	40195.1000
A_23_P109269	812.0000
A_23_P10927	2049.0000
A_23_P109286	134.0000
A_23_P109304	7771.0000
A_23_P109320	303.0000
A_23_P109322	731.0000
A_23_P109333	36886.4000
A_23_P109345	138874.0000
A_23_P10936	186.5000
A_23_P109382	161.5000
A_23_P109393	533.0000
A_23_P109410	862.0000
A_23_P109420	21972.8000
A_23_P109427	4838.5000
A_23_P109436	1776.0000
A_23_P109442	11371.0000
A_23_P109446	5680.0000
A_23_P109452	2351.0000
A_23_P10947	2098.0000
A_23_P109470	8675.0000
A_23_P109488	2592.0000
A_23_P109508	5579.0000

A_23_P109547	9329.0000
A_23_P10956	318.0000
A_23_P109593	17560.0000
A_23_P109606	14450.0000
A_23_P109614	137.0000
A_23_P109636	1336.0000
A_23_P109643	6203.0000
A_23_P109655	4592.5000
A_23_P10966	145.0000
A_23_P109677	26064.3000
A_23_P109682	7073.0000
A_23_P109720	137.0000
A_23_P109733	2660.0000
A_23_P109768	85127.9000
A_23_P109774	6753.0000
A_23_P109785	136.0000
A_23_P109794	506.0000
A_23_P10980	113.0000
A_23_P109812	324.0000
A_23_P109821	92503.5000
A_23_P109843	193.0000
A_23_P109864	3843.0000
A_23_P10987	2034.0000
A_23_P109877	6997.5000
A_23_P109881	3179.0000
A_23_P109895	8652.0000
A_23_P109907	128677.0000
A_23_P109913	239.0000
A_23_P109928	68003.6000
A_23_P109934	955.0000
A_23_P10995	234.0000
A_23_P109950	791.0000
A_23_P109964	289.0000
A_23_P109974	11557.0000
A_23_P109988	10121.0000
A_23_P110005	4490.0000
A_23_P110022	486.0000
A_23_P110031	11564.0000
A_23_P11005	38796.8000
A_23_P110052	223.0000
A_23_P110062	14998.5000
A_23_P110076	2146.0000
A_23_P110090	218.0000
A_23_P110108	2688.0000
A_23_P110116	19233.0000
A_23_P110122	11181.5000
A_23_P110135	239.0000
A_23_P110151	703.0000
A_23_P110167	41071.5000
A_23_P11017	185.0000
A_23_P110175	694.5000
A_23_P110184	4775.0000
A_23_P110196	765.0000
A_23_P1102	363.5000
A_23_P110204	9024.0000
A_23_P110212	90859.0000
A_23_P110234	365.0000
A_23_P110243	3307.0000
A_23_P11025	2735.0000
A_23_P110253	160.9500

A_23_P110266	132.0000
A_23_P110276	256.0000
A_23_P110288	277.0000
A_23_P110299	243.0000
A_23_P110304	1639.0000
A_23_P110319	128.0000
A_23_P11032	4034.5000
A_23_P110345	8535.0000
A_23_P110362	13426.0000
A_23_P110386	174.0000
A_23_P110403	147.0000
A_23_P110412	220.0000
A_23_P110430	280.5000
A_23_P110433	7310.0000
A_23_P110445	4270.0000
A_23_P110462	211.5000
A_23_P110473	2791.0000
A_23_P110492	7173.0000
A_23_P110504	40973.0000
A_23_P11051	912.5000
A_23_P110531	1846.0000
A_23_P110557	473.0000
A_23_P110569	757.0000
A_23_P110571	1571.5000
A_23_P110585	3453.0000
A_23_P110598	4440.0000
A_23_P110606	2827.5000
A_23_P110611	3965.0000
A_23_P110624	677.5000
A_23_P110643	2914.0000
A_23_P110655	3610.0000
A_23_P110661	30850.1000
A_23_P110686	3121.0000
A_23_P110699	324.5000
A_23_P11070	162.0000
A_23_P110704	36423.6000
A_23_P11071	14480.0000
A_23_P110712	74650.5000
A_23_P110725	4980.0000
A_23_P110764	116.0000
A_23_P110777	162.0000
A_23_P110787	2859.0000
A_23_P110791	370820.0000
A_23_P110802	1746.0000
A_23_P11081	125.0000
A_23_P110811	210513.0000
A_23_P110837	347.0000
A_23_P110846	7915.0000
A_23_P110851	644.8500
A_23_P110879	2683.0000
A_23_P110882	3730.0000
A_23_P110896	10628.0000
A_23_P110903	183.0000
A_23_P110941	874.0000
A_23_P110957	794.5000
A_23_P110961	61534.0000
A_23_P111000	21889.1000
A_23_P111005	33430.0000
A_23_P111020	928.5000
A_23_P11103	169.0000

A_23_P111037	42716.0000
A_23_P111041	7684.0000
A_23_P111054	4593.0000
A_23_P111088	313.0000
A_23_P111092	28476.9000
A_23_P111112	23858.5000
A_23_P111126	6330.0000
A_23_P111132	288759.0000
A_23_P111141	28078.1000
A_23_P111155	160.0000
A_23_P111171	15640.0000
A_23_P111188	1657.0000
A_23_P111119	122.0000
A_23_P111194	929.0000
A_23_P111206	1437.0000
A_23_P111228	1647.0000
A_23_P111240	8219.5000
A_23_P111260	531.0000
A_23_P111267	254.0000
A_23_P111273	18023.0000
A_23_P111288	111420.0000
A_23_P111297	1531.0000
A_23_P111303	5959.0000
A_23_P111306	2925.0000
A_23_P111311	244.0000
A_23_P111321	895.5000
A_23_P111343	12614.0000
A_23_P111360	673.5000
A_23_P111361	267.0000
A_23_P111373	15759.0000
A_23_P111381	12513.0000
A_23_P111395	201.0000
A_23_P111402	110.5000
A_23_P111413	1390.0000
A_23_P11144	659.0000
A_23_P111452	87240.2000
A_23_P111480	322.5000
A_23_P111481	75866.6000
A_23_P111487	2107.0000
A_23_P111492	1238.5000
A_23_P111506	589906.0000
A_23_P111517	288.0000
A_23_P111525	3045.5000
A_23_P111531	1006.0000
A_23_P111571	601132.0000
A_23_P111583	257553.0000
A_23_P111593	1028.0000
A_23_P11160	589.0000
A_23_P111604	133.0000
A_23_P111621	12597.5000
A_23_P111635	10722.0000
A_23_P111657	256.0000
A_23_P111662	180.0000
A_23_P111672	3361.0000
A_23_P111698	453.0000
A_23_P1117	667.0000
A_23_P111701	362.5000
A_23_P111712	1396.5000
A_23_P111724	129.0000
A_23_P111737	235.0000

A_23_P111745	14369.0000
A_23_P111753	29929.4000
A_23_P111766	1319.0000
A_23_P111797	8004.0000
A_23_P111804	15423.0000
A_23_P111811	3979.5000
A_23_P111826	172.0000
A_23_P111835	51332.3000
A_23_P111843	74128.6000
A_23_P111860	262.0000
A_23_P111865	1140.0000
A_23_P111888	321.0000
A_23_P111919	133.5000
A_23_P11192	32297.6000
A_23_P111929	422.0000
A_23_P111947	116.0000
A_23_P111961	4956.0000
A_23_P111978	526.0000
A_23_P111981	3947.5000
A_23_P111995	1500.0000
A_23_P112004	2790.5000
A_23_P11201	5492.0000
A_23_P112016	290.0000
A_23_P112026	387.0000
A_23_P112061	42474.7000
A_23_P112078	4556.0000
A_23_P112086	202.0000
A_23_P112100	127.5000
A_23_P112103	2445.0000
A_23_P112113	25867.4000
A_23_P112135	85984.6000
A_23_P11214	3756.0000
A_23_P112159	17420.5000
A_23_P112162	16918.0000
A_23_P112173	194.0000
A_23_P112187	325.0000
A_23_P112201	3832.0000
A_23_P112220	164.5000
A_23_P11224	39850.4000
A_23_P112241	47629.7000
A_23_P112251	94985.0000
A_23_P112260	29112.0000
A_23_P112275	164.0000
A_23_P112289	216.0000
A_23_P112296	148.5000
A_23_P112311	2030.5000
A_23_P112327	215.0000

```
> dim(dataout)
```

```
[1] 999 4
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"), "output", "", "*. *" ,
+ fsep = .Platform$file.sep), recursive=FALSE)
```

For further detail on function variables see individual help files.

- **AALoess.** Normalises a set of gene expression data files using LOESS against a reference data set. An important aspect of analysing sets of microarray expression data is to be able to compare different experiments carried out at

different times. This requires being able to normalize data sets as far as possible correcting for global differences between experiments. *AALoess* function normalises data sets which share a common set of identifiers (typically probe names if all the experiments are carried out on a single platform) by comparison to a baseline file which typically contains an average of many datasets (for example as produced by *Baseline*). If the files to be analysed contain different numbers of identifiers, the output will contain only the data for the IDs common to the whole set. The underlying assumption is that the overall expression distribution over all the probes is the same in all samples, and that most probes are unchanged when comparing any two samples. The normalisation rationale is discussed in more detail in Chain et al. (see Bibliography) . The function also outputs a frequency histogram of the distances between each sample and the baseline which has proved useful in identifying technical outliers (e.g. if there is a problem in hybridization, for example).

Examples. This example takes the files in `agilp/extdata/raw`, *LOess* normalises them and saves them in `agilp/output` folder.

```
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/", "", fsep = .Platform$file.sep)
> outputdir<-file.path(system.file(package="agilp"),"output/", "", fsep = .Platform$file.sep)
> baselinedir<-file.path(system.file(package="agilp"),"extdata","testbase.txt", fsep = .Platform$file.sep)
> AALoess(input=inputdir, output=outputdir, baseline = baselinedir, LOG="TRUE")
```

After running this function review the SSE plot and file to identify outliers - note these in template file.

Alternatively the following example does not log transform the data.

```
> AALoess(input=inputdir, output=outputdir, baseline = baselinedir, LOG="FALSE")
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output", "", "*. *" ,
+ fsep = .Platform$file.sep), recursive=FALSE)
```

- **IDswop. Maps expression data across different bioinformatic identifiers.** *IDswop* replaces one set of identifiers associated with an expression data set (for example platform specific probe IDs) by another set (for example ENSEMBL transcript IDs). This allows expression data sets from different platforms to be combined for analysis . Any appropriate mapping spreadsheet file which contains the source identifiers in one column and the equivalent target IDs in another column can be used. We have typically used files produced by *biomaRt*, but suitable annotation files can also be made using the **select** function, in the *AnnotationDbi* package. If multiple source IDs(e.g. probe IDs) map to the same target ID the function returns the mean or the maximum value within the set.

Examples. This example maps expression data from Agilent ProbeIDs (found in column one of input files) to corresponding EnsemblID. Each output file has the name of the original file with the suffix "\_EnsemblID". If multiple probes map to the same ID and vary by more than 20% they are discarded.

```
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/", "", fsep = .Platform$file.sep)
> outputdir<-file.path(system.file(package="agilp"),"output/", "", fsep = .Platform$file.sep)
> annotation<-file.path(system.file(package="agilp"),"extdata","annotations_sample.txt", fsep = .Platform$file.sep)
> IDswop(input=inputdir,output=outputdir,annotation=annotation,source_ID="ProbeID",
+ target_ID="EnsemblID", ERR=0.2)
```

Alternatively the following keeps all output IDs, even when multiple probes map to a single annotation.

```
> IDswop(input=inputdir,output=outputdir,annotation=annotation,source_ID="ProbeID",
+ target_ID="EnsemblID", ERR=1)
```

More details of how to use this function are given in the *IDSwop* individual help file. *IDSwop* and *Equaliser* (see below) should be used BEFORE *Baseline* and *AALoess*. To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output", "", "*. *" ,
+ fsep = .Platform$file.sep), recursive=FALSE)
```

- **Equaliser. Trims a set of gene expression data files to include only the set of identifiers common to all files.** Different platforms will typically generate files with different numbers of distinct identifiers (for example compare the Agilent 44K and Agilent 60K whole genome expression arrays. Different numbers of identifiers will also often result from use of *IDSwop*. *Equaliser* is a utility which takes a set of gene expression data files and trims each file so as to include only the set of IDs which are common to all files in the set. More details of how to use this function are given in the *IDSwop* individual help file. *Equaliser* and *IDSwop* (see above ) should be used BEFORE *Baseline* and *AALoess*.

Examples Takes four files in folder agilp/dataset/raw, selects only those entries common to all four, and outputs the shortened files to the folder agilp/output.

```
> inputdir<-file.path(system.file(package="agilp"),"extdata","raw/","", fsep = .Platform$file.sep)
> outputdir<-file.path(system.file(package="agilp"),"output/","", fsep = .Platform$file.sep)
> Equaliser(input = inputdir, output = outputdir)
```

To remove these files again and empty the output directory use :

```
> unlink(file.path(system.file(package="agilp"),"output","", "*.*"),
+ fsep = .Platform$file.sep, recursive=FALSE)
```

## Examples

All the examples given above and in the individual help files use data files contained within the /extdata folder within the installed agilp folder. The output is sent to the agilp/output folder. To locate the path of the agilp folder on your computer type

```
> file.path(system.file(package="agilp"))
```

```
[1] "/tmp/RtmpV234R4/Rinst1bf7e67f7503d6/agilp"
```

## Bibliography

1. Tomlinson GS, Booth H, Petit SJ, Potton E, Towers GJ, Miller RF, Chain BM, Noursadeghi M. Adherent human alveolar macrophages exhibit a transient pro-inflammatory profile that confounds responses to innate immune stimulation. *PLoS One*. 2012;7(6):e40348. Epub 2012 Jun 29. PubMed PMID: 22768282; PubMed Central PMCID: PMC3386998.
2. Tomlinson GS, Cashmore TJ, Elkington PT, Yates J, Lehloenya RJ, Tsang J, Brown M, Miller RF, Dheda K, Katz DR, Chain BM, Noursadeghi M. Transcriptional profiling of innate and adaptive human immune responses to mycobacteria in the tuberculin skin test. *Eur J Immunol*. 2011 Nov;41(11):3253-60. doi: 10.1002/eji.201141841. Epub 2011 Aug 30. PubMed PMID: 21805471; PubMed Central PMCID: PMC3258543.
3. Le Bert N, Chain BM, Rook G, Noursadeghi M. DC priming by *M. vaccae* inhibits Th2 responses in contrast to specific TLR2 priming and is associated with selective activation of the CREB pathway. *PLoS One*. 2011 Apr 1;6(4):e18346. PubMed PMID: 21483768; PubMed Central PMCID: PMC3069967.
4. Chain B, Bowen H, Hammond J, Posch W, Rasaiyaah J, Tsang J, Noursadeghi M. Error, reproducibility and sensitivity: a pipeline for data processing of Agilent oligonucleotide expression arrays. *BMC Bioinformatics*. 2010 Jun 24;11:344. PubMed PMID: 20576120; PubMed Central PMCID: PMC2909218.
5. Tsang J, Chain BM, Miller RF, Webb BL, Barclay W, Towers GJ, Katz DR, Noursadeghi M. HIV-1 infection of macrophages is dependent on evasion of innate immune cellular activation. *AIDS*. 2009 Nov 13;23(17):2255-63. PubMed PMID: 19741482; PubMed Central PMCID: PMC2873676.
6. Rasaiyaah J, Noursadeghi M, Kellam P, Chain B. Transcriptional and functional defects of dendritic cells derived from the MUTZ-3 leukaemia line. *Immunology*. 2009 Jul;127(3):429-41. PubMed PMID: 19538250; PubMed Central PMCID: PMC2712111.