

Importing data to INTREPID (G03)

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In this tutorial we import some ASCII data and create an INTREPID Line dataset. We use two different INTREPID tools to perform the same operation. So, we repeat the same job twice. The first example is a tool designed much more for those that like to point and click, and is based upon the Excel import paradigm. The second instance uses the generic Import tool, capable of dealing with many formats, including the simple ASCII column case.

In this tour we import data in an ASCII format that is well suited to geophysical line data. This is called **ASEG-GDF2** format. Australian Government Surveys prescribe this format.

The data is from Albury, Victoria. The data custodians are Geoscience Victoria, Department of Primary Industries, Melbourne, Australia. The data is freely available through the Geoscience Australia GADDS (Geophysical Archive Data Delivery System). This is powered by the Jetstream tool from INTREPID.

Context of this guided tour

In the context of your data processing cycle, this tour represents an early stage in your processing cycle when you receive some data from an external source and you wish to use the INTREPID software to display or perform some additional work. This example is quite simple and does not cover forming tensor or vector fields. Special short cuts are provided to make this easy on import for both the general ASCII flat file case - use the DDF or data description file

and the ASCIIXYZ importer option - header must have 6 components with XX,YY,ZZ,XY,YZ,ZX in the names somewhere.

Overview



Using INTREPID you can directly open, read from and write to datasets in the following data storage formats:

- INTREPID database (`.DIR`)
- Geosoft database (`*.gdb`)
- ESRI shapes and MapInfo TAB files
- Oracle database
- PostgreSQL database
- ERMapper and INTREPID grid (`*.ers`), also `*.gxf`, `*.cdf`, `*.zmap`

For all other formats, you need to import the data and create a new INTREPID dataset.

INTREPID has two tools for importing data.

- **Import tool**—this versatile tool has many import options and can import data stored in a wide variety of formats.
- **Ascii Import Wizard**—this is specially designed for easy import of ASCII data, and is similar in look and feel to the text file import feature of Microsoft *Excel*. It has fewer options than the **Import tool**.

Location of sample data for Guided Tours

We provide two complete sets of sample datasets, one in INTREPID format and one in *Geosoft* format. INTREPID works equally well with both formats. When you want to open a dataset, navigate to the directory containing the required data format.

Where *install_path* is the path of your INTREPID installation, the project directories for the *Guided Tours* sample data are

`install_path\sample_data\guided_tours\intrepid_datasets` and
`install_path\sample_data\guided_tours\geosoft_datasets`.

For example, if INTREPID is installed in

`C:\Program Files\Intrepid\Intrepid4.5.nnn`,

then you can find the INTREPID format sample data at

`C:\Program Files\Intrepid\Intrepid4.5.nnn\sample_data\guided_tours\intrepid_datasets`

This is the default location for the sample data. If you have installed INTREPID normally, the data resides there. If you have installed INTREPID elsewhere, the exercises will work just as well. Just use the appropriate pathnames.

For more information about installing the sample data, see "[Sample datasets—installing, locating, naming](#)" in [INTREPID Guided Tours Introduction \(G01\)](#)

For a more detailed description of INTREPID datasets, see [Introduction to the INTREPID database \(G20\)](#). For even more detail, see [INTREPID database, file and data structures \(R05\)](#).

Location of sample data for CookBooks

Right next to the Guided tours data, is a rich set of more exotic geophysics datasets and grids, already prepared for the cookbook training sessions. A casual user might

also gain some trial and error insights into the capabilities of the software, just by testing the Project Manger's ability to preview and describe the attributes of each of the cookbook datasets.

Steps to follow

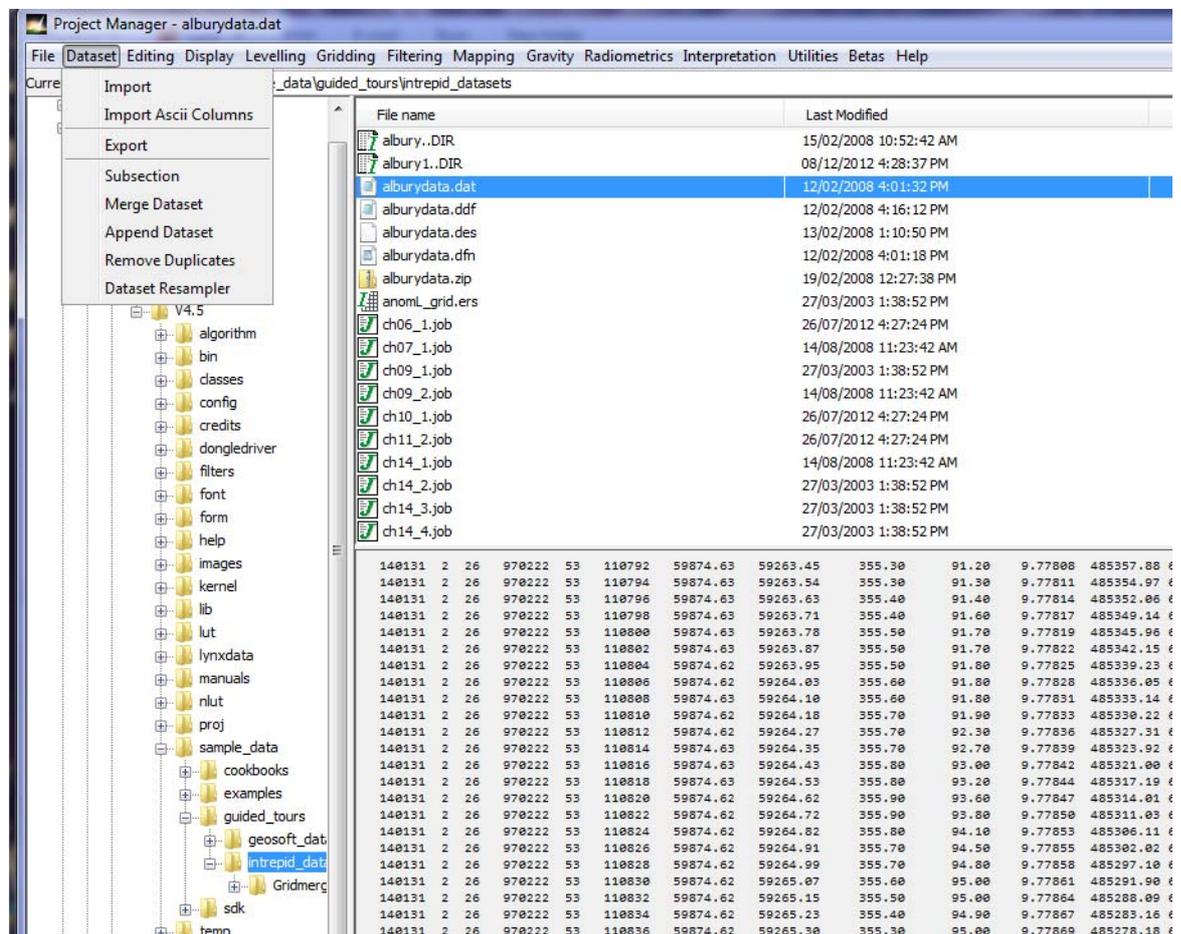
Before you begin the tutorial, locate the file **alburydata.zip** in the directory **install_path\sample_data\guided_tours\intrepid_datasets**. Unzip the file into a directory called **alburydata** (Some unzip programs will create this directory by default).

Import Ascii Columns

This is the most direct and simple method to get ASCII column data into an INTREPID binary format.

- 1 *Start the Project Manager and launch the Import Ascii Columns wizard.*

Start the Project Manager. Navigate to the directory **install_path\sample_data\guided_tours\intrepid_datasets**. From the **Dataset** menu, choose **Import Ascii Columns Wizard**. The **Open for AsciiimportWizard** dialog box appears.



- 2 *Open the input file.*

In the dialog box, select the file **alburydata\alburydata.dat** and choose **Open**. The **Import Ascii Columns** main window appears.

AsciiImportWizard

The Ascii Import Wizard has determined that your data has records that end with newlines. A GDF compliant DFN file was found and has been used to provide defaults for the Import Wizard.

Choose the file type that best describes your data: Delimited - Characters such as commas or tabs separate each field
 Fixed width - Fields are aligned in columns with or without spaces between each field

Header Records To Skip: 0

140131	2	26	970222	53	110792	59874.63	59263.45	355.30	91.20	9.77808	485357.88	6000750.95
140131	2	26	970222	53	110794	59874.63	59263.54	355.30	91.30	9.77811	485354.97	6000751.02
140131	2	26	970222	53	110796	59874.63	59263.63	355.40	91.40	9.77814	485352.06	6000751.08
140131	2	26	970222	53	110798	59874.63	59263.71	355.40	91.60	9.77817	485349.14	6000751.14
140131	2	26	970222	53	110800	59874.63	59263.78	355.50	91.70	9.77819	485345.96	6000750.95
140131	2	26	970222	53	110802	59874.63	59263.87	355.50	91.70	9.77822	485342.15	6000751.01
140131	2	26	970222	53	110804	59874.62	59263.95	355.50	91.80	9.77825	485339.23	6000751.07
140131	2	26	970222	53	110806	59874.62	59264.03	355.60	91.80	9.77828	485336.05	6000750.88
140131	2	26	970222	53	110808	59874.63	59264.10	355.60	91.80	9.77831	485333.14	6000750.94
140131	2	26	970222	53	110810	59874.62	59264.18	355.70	91.90	9.77833	485330.22	6000751.00
140131	2	26	970222	53	110812	59874.62	59264.27	355.70	92.30	9.77836	485327.31	6000751.06
140131	2	26	970222	53	110814	59874.63	59264.35	355.70	92.70	9.77839	485323.92	6000750.96
140131	2	26	970222	53	110816	59874.63	59264.43	355.80	93.00	9.77842	485321.00	6000751.02
140131	2	26	970222	53	110818	59874.63	59264.53	355.80	93.20	9.77844	485317.19	6000751.07

Load ddf Show the GDF DES file

Previous Next Cancel

3 Check original data type.

Check whether the original data type is set correctly. The options are either **Delimited** or **Fixed width**. For this exercise the data is Fixed Width, so the default selection is OK.

Read the message at the top of the **Import Ascii Columns** main window. INTREPID has determined that the input data is in a special ASCII format, called ASEG-GDF2 format. This is a data exchange standard which is well suited to airborne geophysical survey line data. INTREPID automatically finds and use the **alburydata.dfn** file to provide naming and formatting information for the data columns.

Choose **Next** to continue.

4 Change or confirm data field width settings.

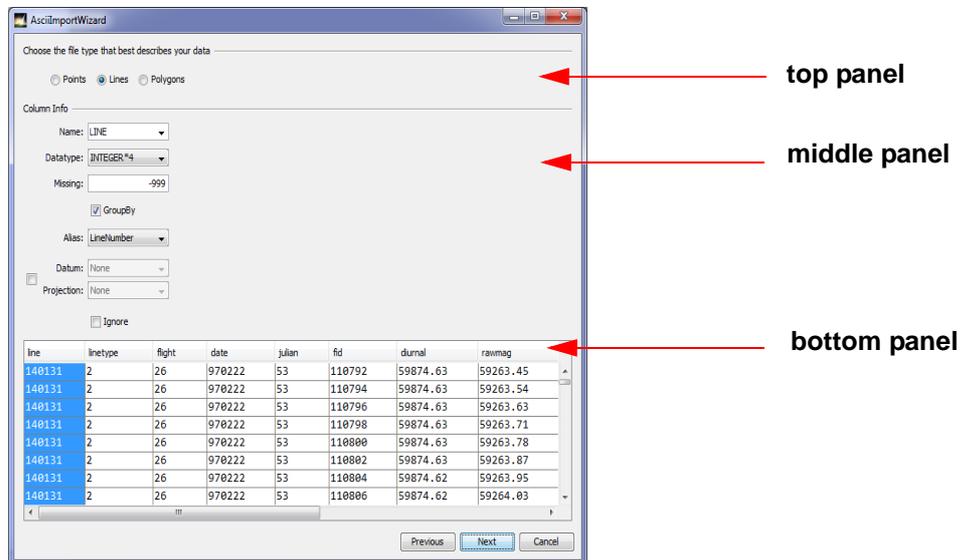
This **Import Ascii Columns** window enables you to see the columns breaks, and to change them if you wish. There is a scroll bar at the bottom of the screen. You can drag the scroll bar to the right, to check that all the column breaks are located correctly. For this exercise, you do not need to change them.

Choose **Next** to continue.

5 Set up parameters for import of data fields.

This **Import Ascii Columns** window is where you set up parameters for the import process. It is divided into three panels.

- **Top panel:** Choose the type that best describes your data
- **Middle panel:** Column Info
- **Bottom panel:** Data columns

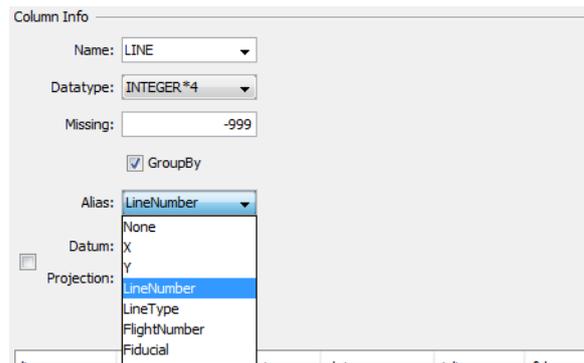


Line number

In the top panel choose the data type that best suits your data. For this exercise we are importing Line data, so leave the default choice as **Lines**.

The first data column is highlighted in blue in the bottom panel. The properties and settings for this data column are displayed in the middle **Column Info** panel. The Name, Datatype and Missing properties for the columns have all been supplied from the input files. However we want to make the Line column a Group By field, since it is the primary identifier for the Line dataset. Check the box to the right of the **Group By** text.

Next we want to set this column to be the INTREPID **Line** alias. From the **Alias** dropdown list, select **LineNumber**.



Quick review of the Group by concept:

An INTREPID Line dataset is made up of groups. Each group represents one survey line of data. Therefore the Line number is imported as a Group By field, and it becomes the primary identifier for each group. However other fields, such as Date and Flight, can also be imported as Group By fields, provided they have only one value per line. This helps to reduce the size of the dataset.

If a collection of data has no line structure we refer to it as point data. An INTREPID Point dataset consists of a single group.

Line type

Now select the next column. Select **Linetype** in the bottom **Data Columns** panel. The second column now appears highlighted in blue, and the **Column Info** panel updates to show the properties for this column.

We also want to make the **Linetype** column a Group By field, since it has only a single value for each line (group) in the dataset. Check the **Group By** check box. Next we want to set this column to be the INTREPID **LineType** alias. From the **Alias** dropdown list, select **LineType**.

Flight, Fiducial

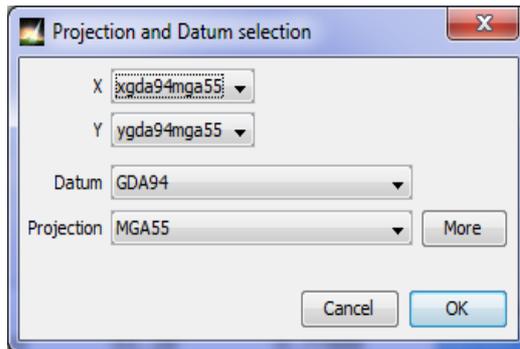
Now select the next column. Select **Flight** in the bottom **Data Columns** panel. The next column now appears highlighted in blue, and the **Column Info** panel updates to this column's information. You can also make the Flight column a Group By field, since it has only a single value for each line (group) in the dataset.

Select the **Fid** column. Set this column to have the INTREPID **Fiducial** alias.

X, Y, projection, datum

Now use the scroll bar to scroll to the far right of the data. Select the **xgda94mga55** column. Set this column to be the INTREPID **X** alias. When you do this the Projection & Datum selection box appears. Here is where you define the **X** and **Y** Alias names, and their associated Datum and Projection. The **Y** Alias is currently wrong so you need to change it. From the pull-down list, choose the **Y** Alias to be **ygda94mga55**.

From the drop down list choose the **Datum** to be **GDA94**. From the drop down list choose the **Projection** to be **MGA55**. When you have finished choose **OK**.



In the **Import Ascii Columns** window, select the **ygda94mga55** column. Check that the Alias for this column is set to **Y**, and the Datum and Projection are set to **GDA94, MGA55**.

- 6 Choose **Next** in the **Import Ascii Columns** window.
- 7 *Specify the output dataset name.*

Specify a name for the created dataset. Choose **Browse**. The INTREPID **Open** dialog box appears. Type in a name for your dataset (for example, **albury2**), and choose **Save As**.

- 8 *Proceed with the import.*

Choose **Finish** in the **Import Ascii Columns** window. INTREPID starts importing the data. A progress bar tells you the state of the import process. When the process is finished, an Information box appears telling you that the data has been successfully imported.

- 9 *The Import Ascii Columns tool creates a DDF of the format used in the import.*

A copy of this is saved locally, and, in this case, you will be prompted if you wish to overwrite the supplied DDF file. Choose another name like **alburydata2.ddf**. This is for your convenience should you wish to re-import the data into INTREPID at a later date.

- 10 *Exit from the tool.*

Choose **OK** to exit from the tool.

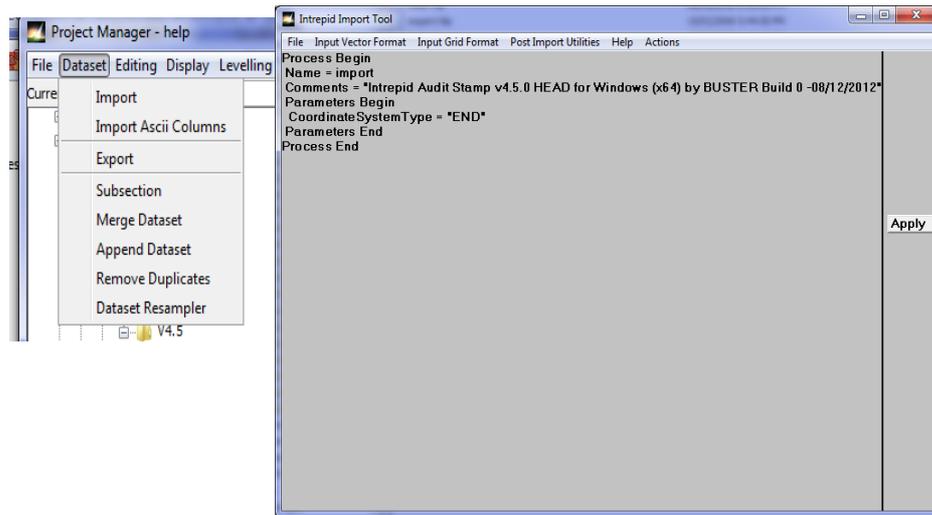
Import tool

The generic import tool gives you access to a rich vein of exchange API supported formats. These are designed to switch back and forth with commonly used formats from thridparty sources, such as image processing packages etc.

- 1 *Start the Project Manager and launch the Import Tool.*

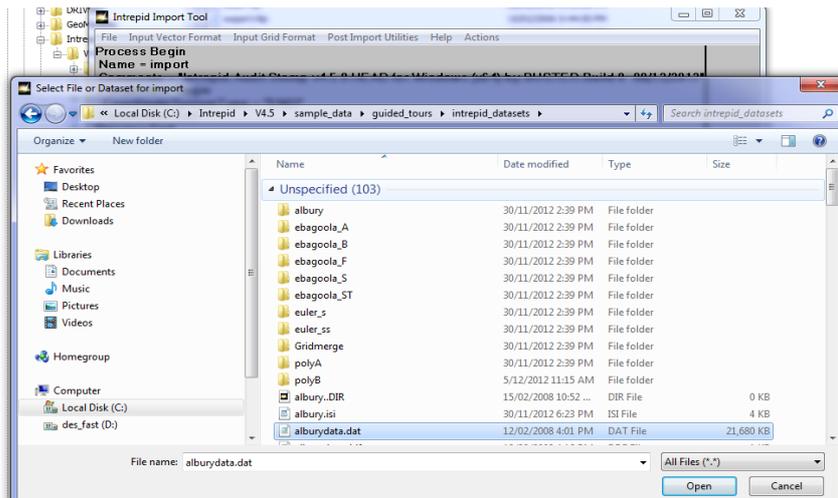
Start the Project Manager. Navigate to the directory **install_path\sample_data\guided_tours\intrepid_datasets**. From the

Dataset menu, launch the Import Tool.



2 *Open the input file.*

From the Import tool, from the **File** menu choose **Open Input File**. The **Select File or Dataset** dialog box appears. Select **alburydata\alburydata.dat** from the list of files and choose **Open on Windows, or Select on LINUX**.



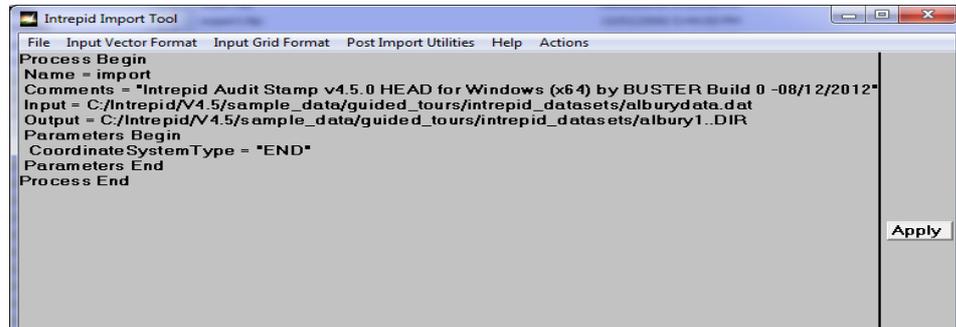
The file name appears on the text in the **Import Tool** window.

3 *Specify the output dataset name.*

Under **File**, choose **Specify Output Dataset**. The **Save new Dataset as** dialog box appears. Type in the name of your new dataset **albury1** and choose **Open**.

Note: The button is **Open**, not **Save**, because you are just opening a dataset ready to receive the imported data.

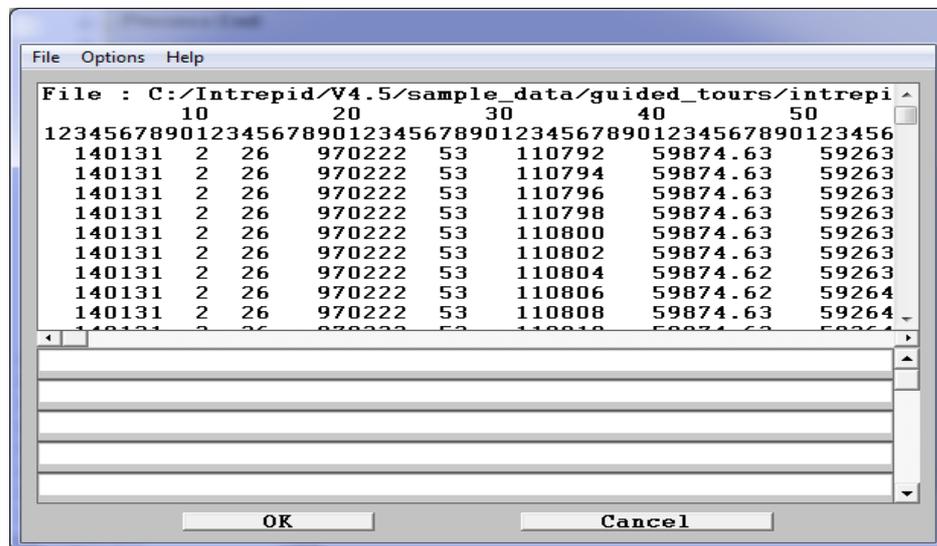
Note: Use the name **albury1** because there is already a dataset we have supplied called **albury**.



4 *Choose the input file format.*

If you are importing Line or Point or Polygon data, choose an option from the **Input Vector Format** list. If you are importing a Grid dataset, choose an option from the **Input Grid Format** list.

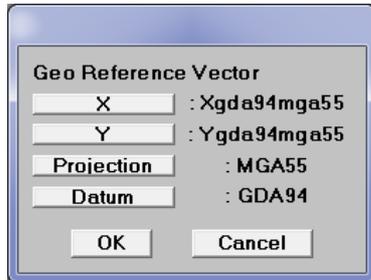
In this case we are importing Line data, so from the **Input Vector Format** list, choose **Ascii Columns**. The **AsciiColumns DDF editor** appears. DDF stands for data description format, and in the popup below, the bottom section is reserved for using this DDF language, to describe each column, one line for each column.



processing completed appears. Choose **OK**.

- 7 *Change or confirm the X and Y alias assignments and the Datum and Projection of the dataset.*

The **GeoReference Vector** dialog box appears. Check that the **X** and **Y** aliases and the Datum and Projection information are correct. This information can either be set here or can be provided from the DDF. For this exercise the information was provided from the DDF. Observe that when you choose the **X**, **Y**, **Projection** and **Datum** buttons, a list of options appears. For this exercise you don't need to change anything, so choose **Cancel** to dismiss each list.



- 8 *Exit from the tool.*
To exit from the Import tool, choose **Quit** from the **File** menu.
- 9 *Use the INTREPID Project Manager to examine the dataset you have created.*
- 10 *Move to the next exercise, the Import Ascii Columns wizard.*

Further things to consider

During the import process you defined certain fields to be INTREPID **Alias** fields. This tells INTREPID which fields are to be recognised as **Fiducial**, **Line**, **X**, **Y**, and so on. If these fields are not defined as Alias fields during import, you can define them as Alias fields after import. This is easily done using the Project Manager. Simply highlight the dataset name under the Project Manager **Filename** panel, and select the **Fields** tab. Current Aliases are displayed in the **Alias** column. Select this column if you want to define a field as an Alias value. INTREPID expects to see Aliases set for at least **Linenumber**, **X** and **Y**.

Key points for this guided tour

In this guided tour you have:

- Used the **Import** tool to import some ASCII data and create an INTREPID Line dataset
- Used the **Import Ascii Columns** tool to import the same ASCII data and create an identical INTREPID Line dataset
- Gained some insight into how **Alias** and **Group By** concepts work in INTREPID.

Frequently Asked Questions



Q : I have a lot of files to import. They all have a similar format. Is there an easier way to do this?

A : Yes. The **Import** tool has batch options which make multiple-file imports easy.

Q : I have some data to import with a unusual column delimiter. Can I import it?

A : Yes. The **Import** tool can handle a variety of non-standard column delimiters.

Q : I have forgotten the DDF syntax. Are there some examples I can refer to?

A : There are lots of examples of DDF files in the INTREPID installation/examples area.

Q : I find the DDF editor in the Import tool difficult to use. Are there any other options?

A : You may find it easier to create your DDF using a standard text editor and then import it into the DDF editor.