In order to use generic GeoTIFF imagery in ArcView 3.x, follow the steps below (in some cases you may be able to import imagery through the "File -> Import Image" dialogue but this is only for a limited variety of data types):

1. **Start ArcView**. In MS Windows this will generally be through either a desktop icon or under the "Start -> Program Files -> ESRI" section of the Windows menu.
2. **Activate the Appropriate Extensions**. ArcView has native support for TIFF 1.0 files but it may be necessary to activate TIFF 6.0 support if it is not already in stalled. In ArcView go to "File -> Extensions" and ensure that TIFF 6.0 support is installed and checked. This will allow you to *view* the GeoTIFF imagery in question.
    2.1 In order to retrieve spatial data from an image *it is necessary to have the Spatial Analyst* extension installed. Furthermore, the Spatial Analyst Extension is required to view both images and GRIDs. It is often helpful to install and activate 3D Analyst and/or Image Analyst as well. These extensions are necessary because even with TIFF 6.0 support, the spatial referencing information is not automatically read into your view when you add the GeoTIFF.
3. **Reconcile Projections**. It is desirable to have all your data in the same projection before one starts adding themes to a view. If your images and or other data spatial data are in disparate projections, reproject them *before* adding the image to your view. Following this basic rule will eliminate a potential source of confusion.
4. **Open a View**. First open a project: "File -> New Project". Second, open a new view by double clicking the "Views" icon in the project window.
5. **Add Imagery**. Under the "View" menu, select "Add Theme" (or press Ctrl-T). The "Add Theme" window appears. Under "Data Source Types" select "Image Data Source". Navigate to the appropriate drive and folder on the right side of the window. Select the appropriate GeoTIFF file and click "OK".
6. **Note Spatial Reference Information**: In the case of our sample image [bookmark above], open the .met file you downloaded. It should list all the information you will need for basic image display and analysis. Our sample image's .met file reads follows:

```
::METADATA FILE
IMAGE_ID P015R33_5T870516
PATH 15
ROW 33
DATE 05/16/87
FILE_FORMAT GEOTIFF
DATA_FORMAT BYTE
ROW_COUNT 7682
COL_COUNT 8022
ROW_START 1
COL_START 1
PLATFORM LANDSAT5
SENSOR TM
PROJECTION UTM18
DATUM WGS84
UNITS METERS
X_START 2.2332600000E+05
```

```
Y_START 4.4171010000E+06
X_INCREMENT 2.8500000000E+01
Y_INCREMENT -2.8500000000E+01
```

The "X_START" and "Y_START" fields above indicate the coordinates for the upper left portion of the image in meters. For purposes of simplicity, convert X_START and Y_START from scientific notation to standard numbers (move the decimal point the number of spaces to the left indicated after the "E+"). In order to obtain the other post-orthorectification coordinates (do NOT use the coordinates from the .hdr file), utilize the following formulae:

Corner Pixel Position	Method to Calculate X and Y Values for Pixel
Upper Left	X_START; Y_START
Upper Right	X_START; (Y_START) * (Y_INCREMENT * ROW_COUNT))
Lower Left	(X_START) * (X_INCREMENT * ROW_COUNT)); (Y_START)
Lower Right	(X_START) * (X_INCREMENT * ROW_COUNT)); (Y_START) * (Y_INCREMENT * ROW_COUNT))

[To be replaced by web-based app. Hopefully]

7. **Import Projection Information**: Under the "View" menu, select "Properties" then click the "Projection" Button. In the "Projection Properties" dialogue, leave the "Standard" button highlighted and select the "Category" as "UTM – 1983", followed by the appropriate "Zone". Next, highlight the "Custom" button to the right of "Standard". Leave the projection as "Transverse Mercator" but change the spheroid to "WGS-84". Click "OK". Note that the map units should now read "Meters". Click "OK" again. Your view theme should now be unchecked. Check it again and select "View -> Zoom to Themes".

8. **Verify the corner points**: Compare the corner point values displayed when the "Definition" box is highlighted under "Theme -> Properties" (Figure 1) with those calculated under Step 6.
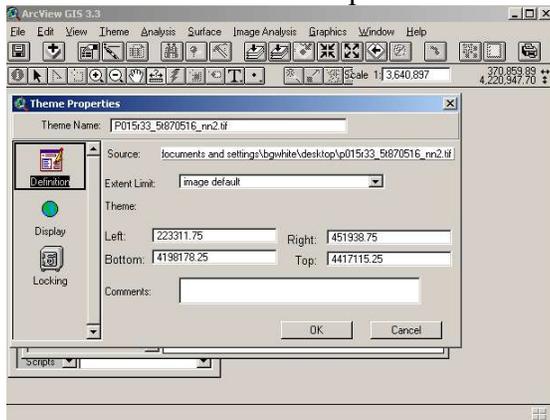

Figure 1: Theme Properties Dialogue

9. **{Optional} Define Area of Interest for Image Analysis:** Select "Image Analysis -> Properties". Under "Analysis Extent" select "SameAs [ThemeName]". You will have to enter in the cell size (28.5 in our example). The Rows and Columns will then be calculated on their own. This should match your previously entered image dimensions. To define an alternate region of interest using a function such as "Union", redefine your "Analysis Extent" parameters.

9.1 **Alternate Method [Avenue Script]:** Use the following script to define the analysis properties in Avenue:

```
theIAProp = theView.GetExtension(IAProperties)
theIAProp.SetCellSize(#ANALYSISPROP_VALUE,50)
theIAProp.SetExtent(#ANALYSISPROP_MAXOF,NIL)
theIAProp.SetMask(theMaskFTheme)
theIAProp.Activate
```

In addition, the user may bring up the interactive dialogue by using:

```
ImanPropDialog.Show(theView)
```

A Final Note on Using ArcView: ArcView is first and foremost a GIS package. While it is excellent for integrating imagery into map compositions, it does not perform many of the image processing functions found in remote sensing software. For example ArcView will not warp or reproject your imagery (remote sensing software or ArcInfo can be used for this). In addition, some users have reported issues with the amount of memory required by ArcView when using satellite imagery.

A Final Note on ArcView and GeoTIFF support: Note that if the GeoTIFF tags in the file you are using do not contain the spatial information required by ArcView, you may need to create a "World File". To do this, simply create a text file with the spatial reference information required and name it the same as the image file but with a "w" added to the end of it (i.e. "glcfimage.tiff"'s wolrd file would be named "glcfimage.tiffw"). The file should be in the same directory as the GeoTIFF. The basic format followed in world files is:

Line 1: X pixel size in map units (X_INCREMENT)
Line 2: Rotational information
Line 3: Rotational information
Line 4: Y pixel size in map units (Y_INCREMENT). Note this will be a negative.
Line 5: Upper left pixel x coordinate (X_START)
Line 6: Upper left pixel y coordinate (Y_START)

A sample GeoTIFF world file would look like this:

```
250
0
```

```
              0
           -250
-2382841.23794836
9852091.339175191
```