

1.0 Example: Creating a Rotated Ellipsoid with the Surface Wizard.

This example will create a rotated ellipsoid using the surface wizard. *Figure 1-1* shows the result.

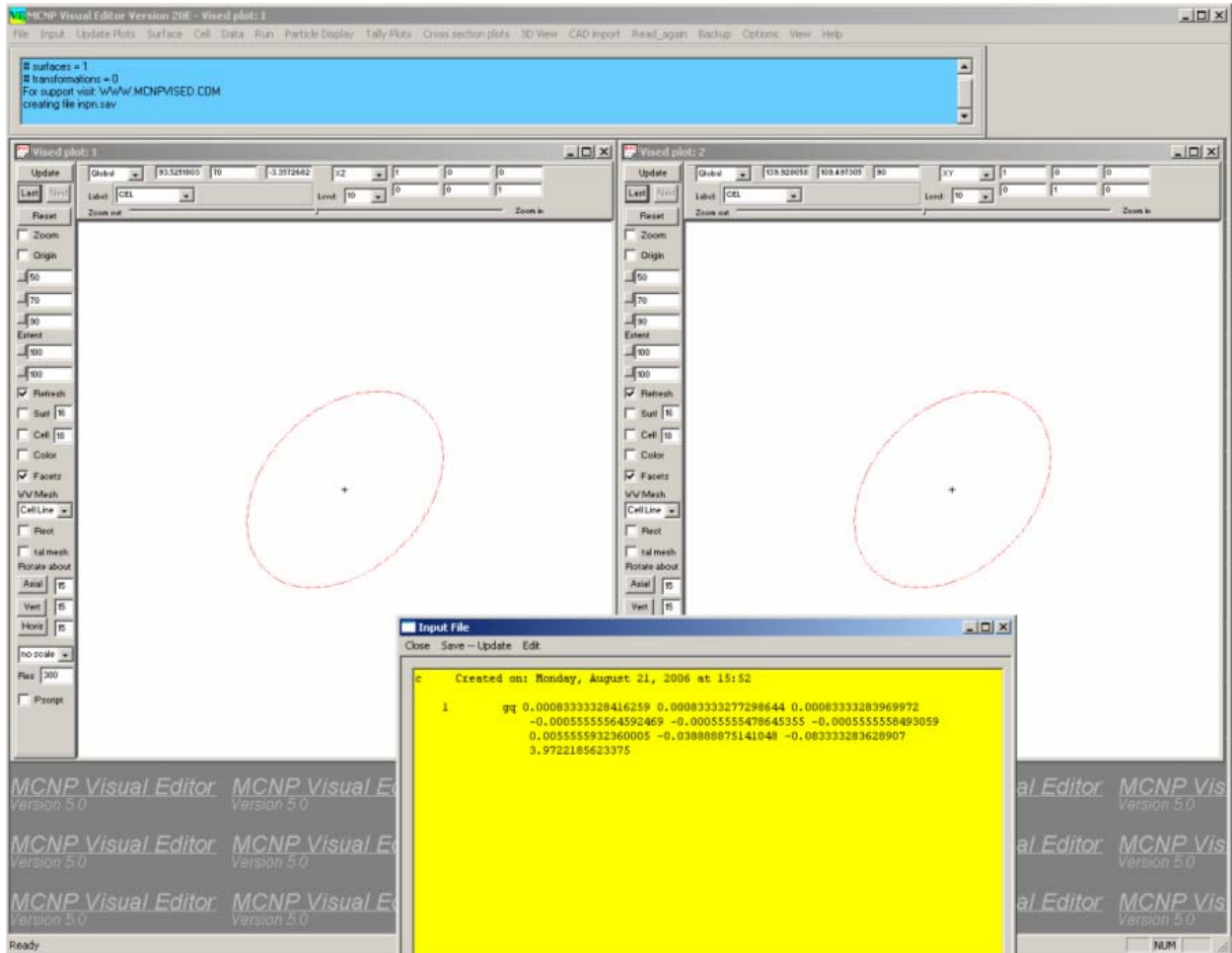


Figure 1-1 A Rotated GQ Ellipsoid

Start the Visual Editor.

On the Main Menu, **Click Surface.**

On the Surface Panel Menu, **Click Wizard.**

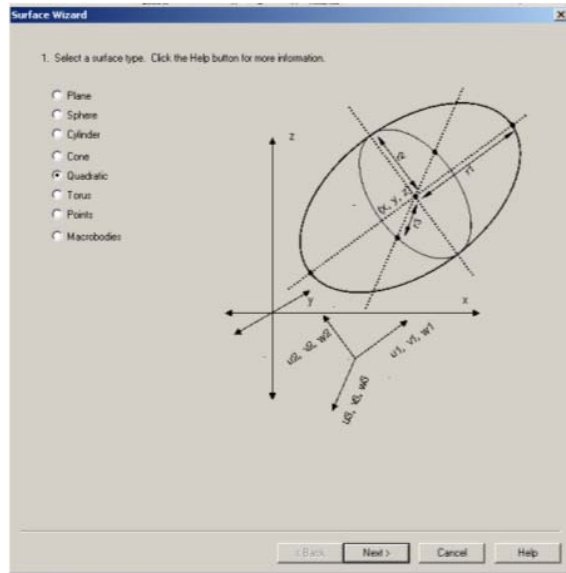


Figure 1-2 The Surface Wizard – Panel 1

On the first Wizard panel, **select Quadratic** as indicated in *Figure 1-2*.
Click Next.

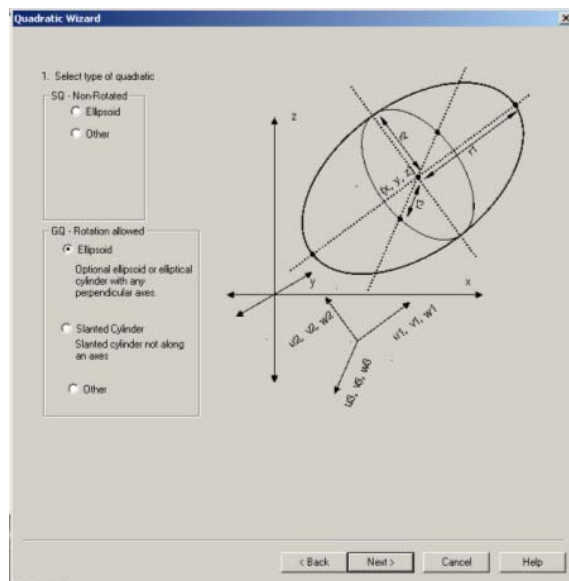


Figure 1-3 The Surface Wizard – Panel 2

On the second Wizard panel, **select the GQ Ellipsoid** as indicated in *Figure 1-3*.
Click Next.

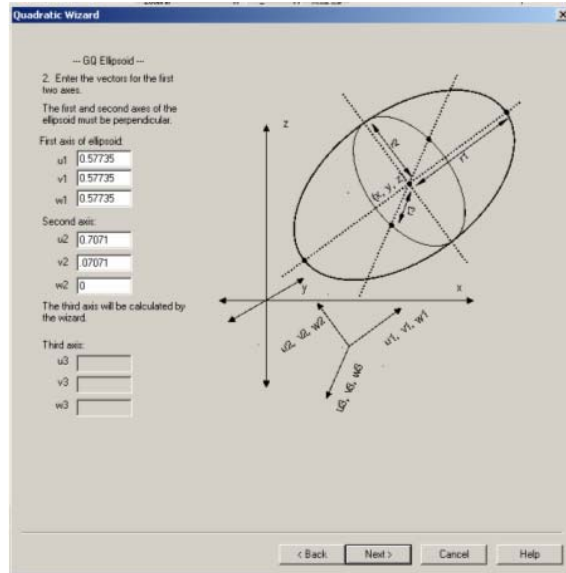


Figure 1-4 The Surface Wizard – Panel 3

On the third Wizard panel, **enter the following data:**

The first axis vector:

$$\mathbf{u1} = 0.57735$$

$$\mathbf{v1} = 0.57735$$

$$\mathbf{w1} = 0.57735$$

The second axis vector:

$$\mathbf{u2} = 0.7071$$

$$\mathbf{v2} = 0.7071$$

$$\mathbf{w2} = 0$$

Click Next.

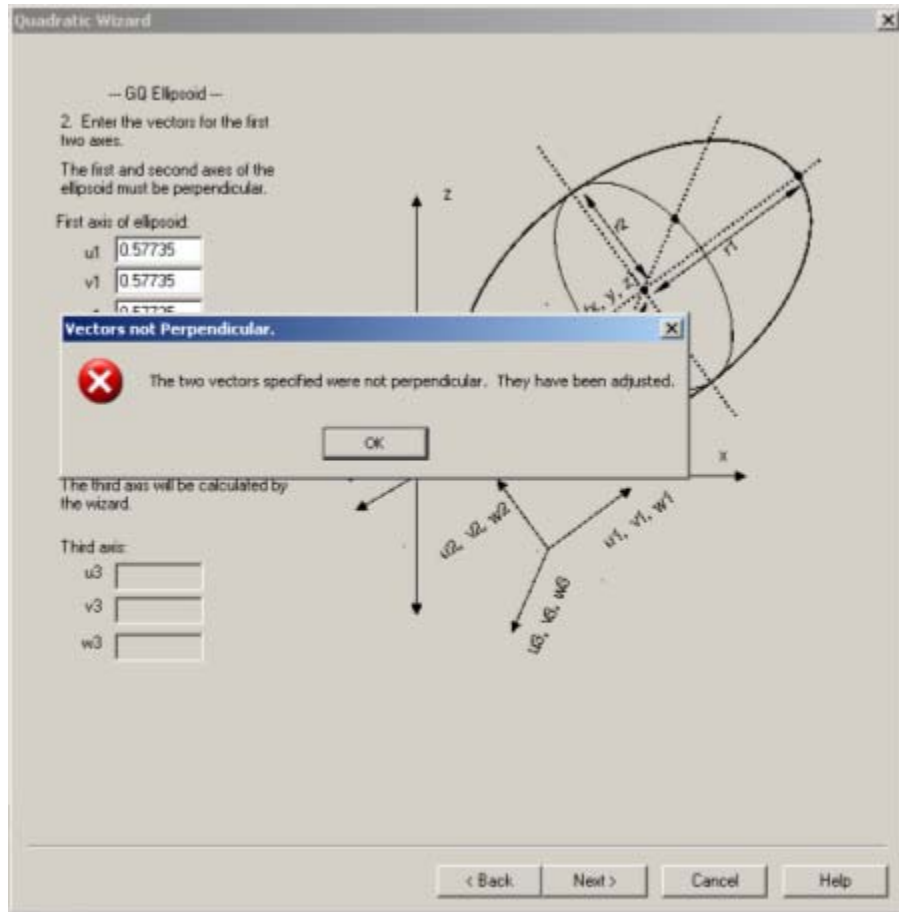


Figure 1-5 The Surface Wizard – Panel 3 Adjust Vector

The message shown in *Figure 1-5* will appear. The wizard will adjust the vectors if they are not perpendicular. **Click OK.**

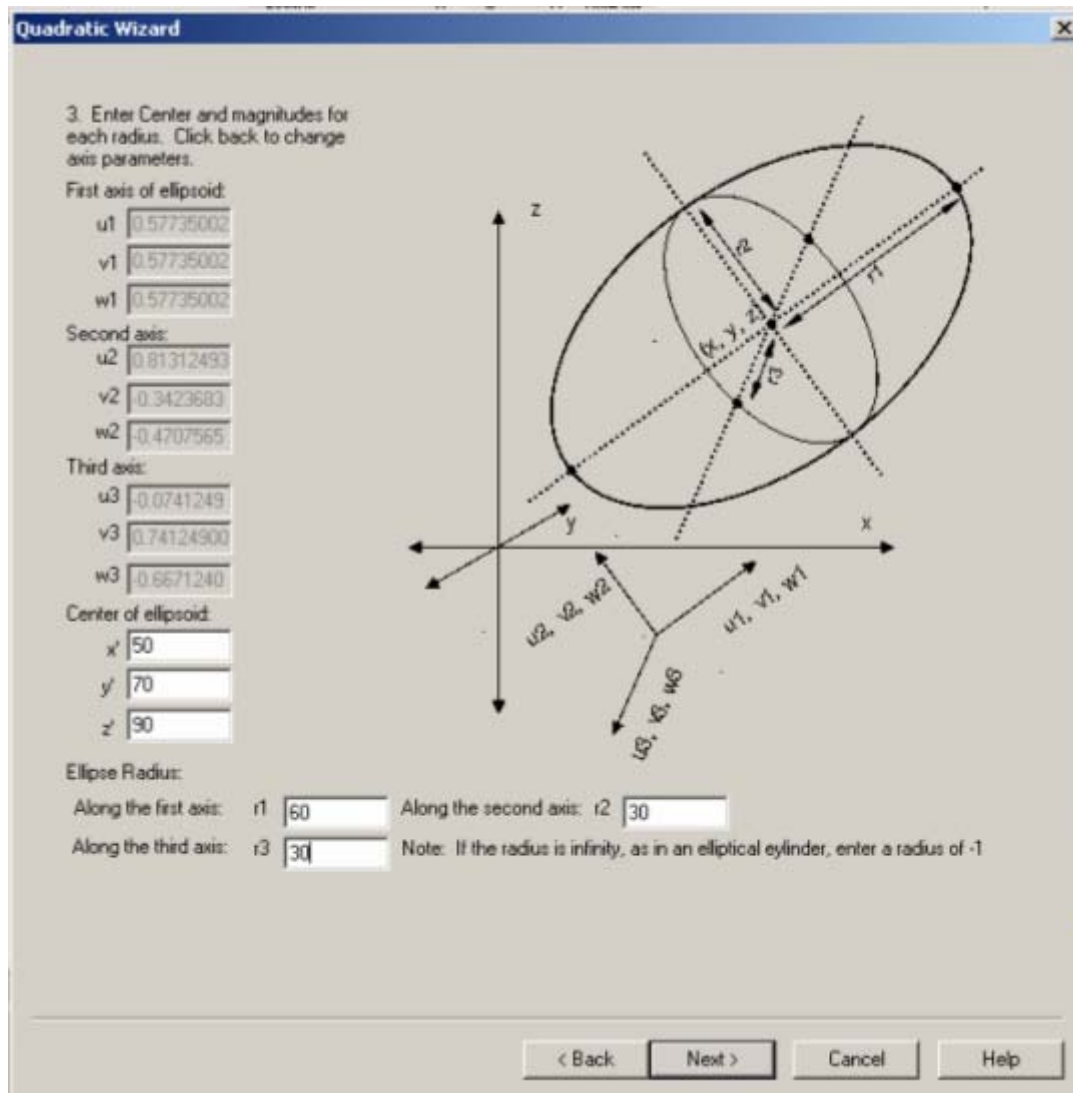


Figure 1-6 The Surface Wizard – Panel 4

Note the adjusted values for the three axes.

On the fourth Surface Wizard panel, **enter the following values:**

The x coordinate of the center of the ellipsoid, $x'=50$.

The y coordinate of the center of the ellipsoid, $y'=70$.

The z coordinate of the center of the ellipsoid, $z'=90$.

The ellipse radius along the first axis, $r1=60$.

The ellipse radius along the second axis, $r2 = 30$

The ellipse radius along the third axis, $r3 = 30$

Click Next.

On the fifth Surface Wizard Panel (not shown in a figure), **click Next.**

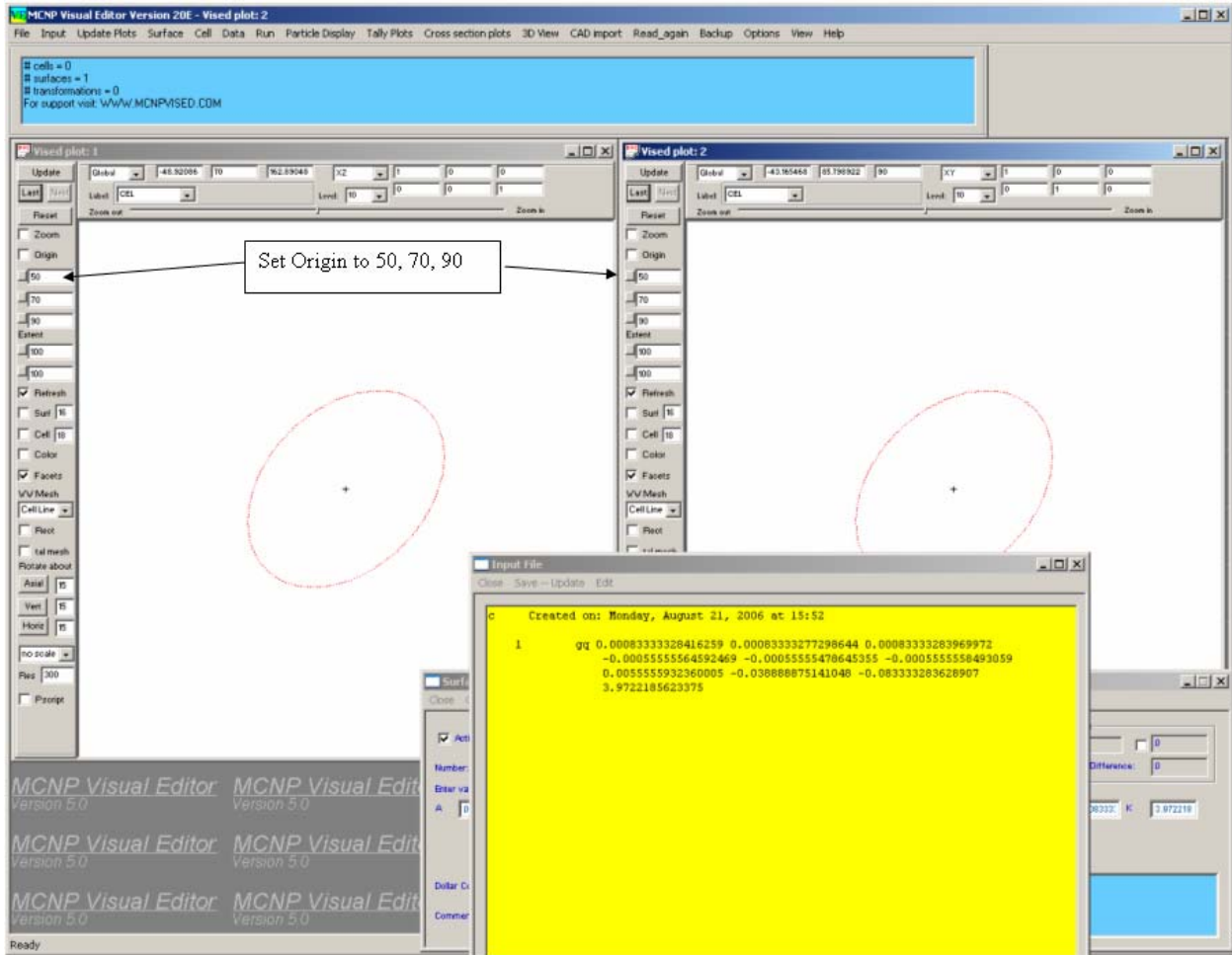


Figure 1-7 Display Ellipsoid

On the Main Menu, **Click Input.**

On the Input Panel, **Click Save-Update.**

On the Left Plot Window, **change the origin to 50, 70, 90.**

On the Right Plot Window, **change the origin to 50, 70, 90.**

On the Main Menu, **Click Update Plots**

If the red lines do not display, **right click** on the plot window and select **SURFACE SHOW ALL.**