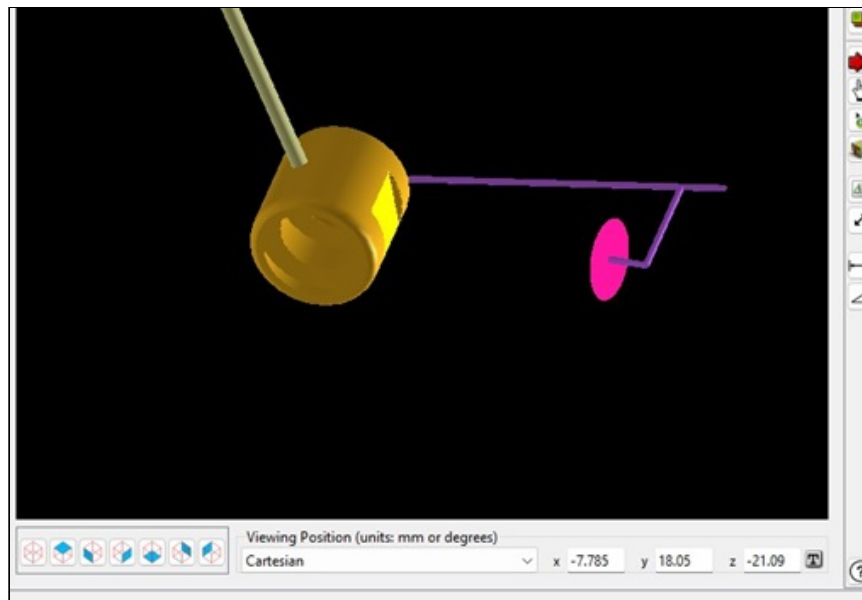


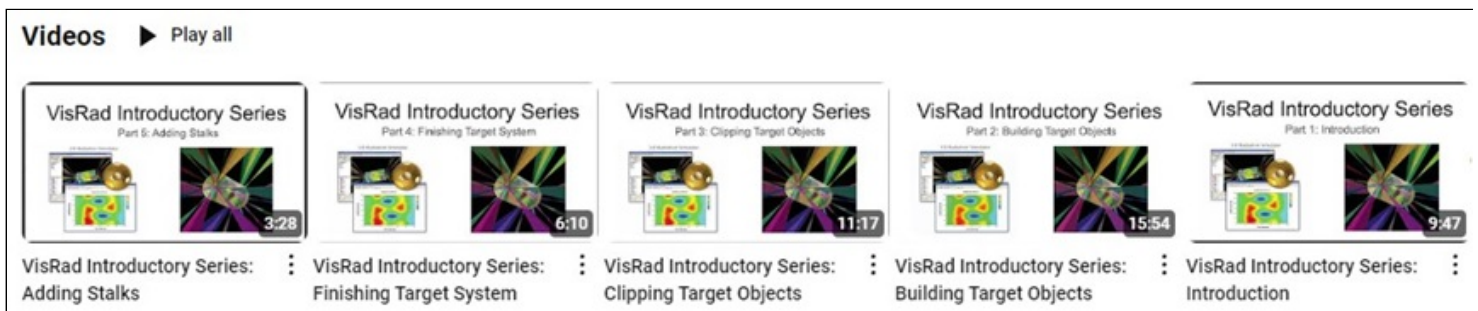




Revisions for VISRAD 20.0.0

- The way in which the graphics are rendered in the *Main Window* has been modified. The purpose is to make manipulating the view easier and more intuitive. Note that the updated link for the *Help* button (🔍, lower right of *Main Window*) now goes directly to the help page on *Graphics Viewing Controls*.
 - The viewing position ("eye" position) is now tracked and can be displayed at the bottom of the *Main Window* (see lower right in image below).
 - Toggling between showing the *Viewing Position* values and the *Color Bar Panel* (shown in previous versions of *VISRAD*) is controlled by right-clicking on that area of the *Main Window*.
 - When displaying data (using the *Display* menu), the *Color Bar Panel* is automatically displayed for all quantities other than *Grid* (in which case the *Viewing Position* values are shown).
 - Picking on items in the *Main Graphics Frame*:
 - To select a *Target Component*, pick with mouse.
 - Double-click to show its properties dialog.
 - *Engineering Views* are updated to be based on the picked component.
 - If coordinate system axes are displayed (using *Show | Axes* menu item or 🌐 toolbutton), the axes are updated to be those of the picked component.
 - To select a *Surface Element*, use SHIFT + pick with mouse.
 - SHIFT + double-click shows the surface element's node positions dialog.
 - To show the ID of a *Laser Beam*, pick with mouse.
 - Double-click displays *Laser Beam Properties Dialog*.
 - The selected beam in the *Laser Beams List* is set to the picked beam.
 - Because of the modified rendering, several options have changed:
 - The "Orbit About Picked Surface/Object" toolbutton (🌀) has been eliminated. Instead rotations are performed around a picked *Target Component*, *Surface Element*, or target chamber center using the 'Rotation' toolbutton (see below).
 - The "Adjust View Angles" toolbutton (👁️) has been replaced by an "Adjust Up Vector" toolbutton (⬆️) that allows the view in the *Main Graphics Frame* to be rotated.
 - The rotation of the 'Up' vector, which represents the rotation of the view with respect to the target chamber z-axis, is now shown in the *Set Viewing Parameters* dialog.
 - The option to show the *Main Graphics Frame* using *Perspective* projection has been removed. *Orthographic* projection is now always used.
 - The option to show the *Scene Rotation Controls* in the lower left panel of the *Main Window* has been removed. (This panel was only shown if it was set in *Preferences*). Its capabilities are also available using the 'Rotate About Surface' (📐) toolbutton.
 - Shortcuts have been added for manipulating the graphics in the *Main Window*.
 - Pressing the space bar: Puts the viewing back to pointer mode (same as clicking on 🖱️).
 - Pressing "r" changes cursor to *Rotation* mode (same as clicking on 🔄).
 - if a *Target Component* has been picked with the mouse, the rotation about that object.
 - if a *Surface Element* has been picked with the mouse (picking while holding the SHIFT key), the rotation is about that surface element.
 - if neither of the above is picked, the rotation is about target chamber center (TCC),.
 - Pressing "c" after a *Target Component* has been picked with the mouse: The view is translated so that the picked item is centered in the view.
 - Pressing "z" changes cursor to *Zoom* mode (same as clicking on 🔍).
 - Pressing "t" changes cursor to *Translate* mode (same as clicking on 📏).



- A series of introductory videos on using *VISRAD* is now available (see <https://www.youtube.com/@PrismCS-m2w>). This initial set of videos focuses on setting up *Target Components*. They can be accessed using the *Help | Tutorials* menu item.



- *Workspace Increments* can now be saved. An "Increment" is a temporary file that is written to a folder that stores the workspace parameters *without overwriting the current workspace*. Users can choose to go back and reload a workspace increment by simply browsing for the file.
 - To save a workspace increment, use either the *File | Save Increment* menu item, or click on the  tool button.
 - The folder used for storing increments has the same name as the current workspace file, but without the ".vrw" extension.
 - The name of the increment is the same as the workspace file with an integer appended to the name.
 - When closing the workspace, the user is prompted to save or delete the folder containing the workspace increments.
- *Main Window Graphics Frame* background color: If a background color for viewing is set to be used in *Preferences (Graphics* tab), the specified background color will be used when loading in a new workspace file. To use the color saved in the workspace file, select *Use Default Color* in the *Background Color (Viewing)* box.
- *NIF Laser System*: Added support for exporting laser beam data suitable for the NIF SST. To do this, select the *File | Export Laser Beam Data | NIF SST Beam Data* menu item. The data is written to a '.csv' -formatted file suitable for reading into Excel.
- *OMEGA Laser System*: A new DPP was added to the list of available phase plates ("OMEGA 100 um (SSD off, DPR out) DPP").
- *Line-Target Intersection Points Tool*: The line is now shown when the *Update* button is pressed, and shown as long as the *Line-Target Intersection Points Tool* is open.
- *Orientation Angles Calculator*: The distance between the two points used to compute orientation angles is now also shown.
- When showing the line-of-sight for a *Diagnostic Port* (using *Show LOS* column in the *Port Positions Dialog*), the line-of-sight now extends beyond the target chamber origin. It is shown as a dashed line in the direction away from the port.
- When adding a *Stalk* object using the *Picked Surface Node Positions* ( tool, the default for the surface normals is set to "out".
- *Movie Creator*:
 - Support for directly generating a single video (*.avi) file has been added. AVI files can be viewed by a variety of movie players.
 - When adding a *Movie View* to the list of views, the viewing parameters now default to those currently in use in the *Main Graphics Frame*.
 - Double-clicking on a view in the *Movie Views* list displays that view in the *Main Graphics Frame*.
- Bug fixes:

- Fixed crash when attempting to attach multiple target component *Stalks* to a single *Target Mount*.
- Fixed crash that occurred in some cases after deleting a *Clipping Volume*.
- *Clipping Volume Parameters* dialog: fixed bug for automatically adjusting position values when changing the *Coord. System* in the *Position* box.