MARI

REFERENCE GUIDE

VERSION 2.6v2

THE FOUNDRY.

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1 Preface

Mari is a creative texture-painting tool that can handle extremely complex or texture heavy projects. It was developed at Weta Digital and has been used on films such as The Adventures of Tintin: The Secret of the Unicorn, District 9, The Day the Earth Stood Still, The Lovely Bones and Avatar.

The name Mari comes from the Swahili 'Maridadi', meaning 'beautiful' and carrying connotations of 'usefulness'.

About this Guide

This guide provides a complete reference for all the functions and fields within Mari. It does not give you any instructions on using Mari. For details on installing Mari, read the *Mari Getting Started Guide*. For full instructions on using Mari, read the *Mari User Guide*.

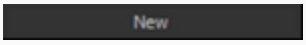
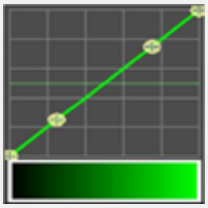
The first part of this document describes all the functions within Mari, broken up by functional area.

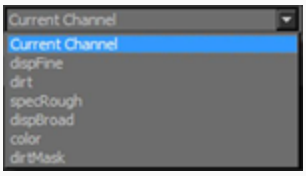
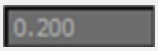
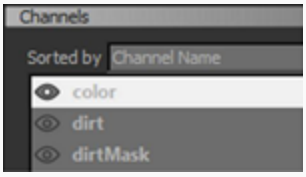
Contact customer support

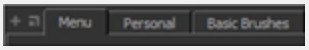
Should questions arise that this manual fails to address, you can contact Customer Support directly via e-mail at support@thefoundry.co.uk or via telephone to our London office on +44 (0)20 7479 4350 or to our Los Angeles office on (310) 399-4555 during office hours.

2 Types of Controls

The types of controls that can be found in Mari are listed in the table below. Each control is accompanied by an example image of how t appears in Mari, as well as a description of what it does and how to use it.

Controls	What it looks like	What it does	How to use it	Notes
Add attribute		Lets you add an attribute to a property.	Click the icon and fill in the **Add User Attribute** dialog box.	For more information, see the *Extending Mari* chapter in the *Mari USer Guide*.
Buttons	 , 	Lets you select a function.	Click it.	May show an icon or a word.
Checkbox	 unselected,  selected	Lets you select an option.	Click to select.	An **x** displays when selected.
Control sphere		Lets you move a light around the scene.	Click and drag to pull the light around.	
Curve editor		Maps between input and output values (45° = the same). Bar along the bottom displays the effect at each point.	Drag to move points on the graph. Add points by clicking on the curve or bar. Edit a point by right-clicking it.	You can also remove a point by clicking on it while holding **Ctrl**/**Cmd**.

Controls	What it looks like	What it does	How to use it	Notes
Dropdown list		Lets you select from a list of valid values.	Click the down arrow on the right, then click to select an option.	
Entry box		Lets you type an entry.	Click inside the box and type a valid entry.	Often combined with a slider and reset button. When an entry box has been combined with a slider to change values, click in the entry box and press the middle-mouse button+drag up or down to increase or decrease the value.
Horizontal slider		Slides along a range of valid values.	Click and drag left (more) or right (less).	Often combined with an entry box (that shows the value) and reset button.
Incrementers		Lets you increase or decrease a value.	Click the up or down arrows.	If you press **Ctrl** (on Windows and Linux) or **fn** (Mac) while pressing the up or down arrows, the number is increased or decreased by whole numbers rather than individual decimal points.
List		Lets you select from a list of valid values.	Click to select an option.	
On/Off Indicator	 on,  off	Shows whether an option is on or off	Look at it.	Often combined with a switch.

Controls	What it looks like	What it does	How to use it	Notes
Option buttons		Lets you select mutually exclusive options.	Click to select which option you want.	Circle is filled when selected. Sometimes called “radio buttons”.
Remove attribute		Lets you remove an attribute from a property.	Click the icon, then click **Remove** to confirm.	
Reset button		Reset to the default.	Click the icon.	Often combined with an entry box and slider
Swatch		Displays the currently selected color, and lets you select a different color.	Click to select a color from the Colors Palette	
Switch		Turns an option on or off.	Click and drag right (on) or left (off).	Often combined with an On/Off indicator.
Tabs		Displays several groups of the same kind of information, such as different categories of brush tips in the Brush Editor Palette.	Click: • a tab to view it •  to view the previous or next tab •  to add a tab •  to delete a tab •  to open the current tab in a separate window	

Controls	What it looks like	What it does	How to use it	Notes
Thumbnail		Displays a thumbnail preview of a selected feature or function.	Look at it.	

3 Project Functions

A list of the functions used on the project level, for instance, shortcuts and menu items to open or close a project can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
New project	• *Menubar* | **File** > **New** • *Keyboard* | **Ctrl**/**Cmd**+**N** • *Projects tab* | **New** button • *Projects tab* | *Right-click* > **New** • *Toolbar* | 	Creates a new project.	New Project Dialog	Name the project, select options, and add geometry.
Open a project	• *Projects tab* | *Right-click* > **Open** • *Projects tab* | *Double-click*	Opens the selected project (the project you right-clicked on).		
Open recent project	• *Menubar* | **File** > **Open** > <project name>	Opens a project, from a list of the last 10 projects opened.		
Save project	• *Menubar* | **File** > **Save** • *Keyboard* | **Ctrl**/**Cmd**+**S** • *Toolbar* | 	Saves the current project.		
Close project	• *Menubar* | **File** > **Close** • *Keyboard* | **Ctrl**/**Cmd**+**W** • *Toolbar* | 	Closes the current project.	**Save Changes Before Closing?** (if unsaved changes)	

Function	How to access it	What it does	Opens this dialog box	Notes
Delete project	• *Projects tab* | **Delete** button • *Projects tab* | *Right-click* > **Delete**	Deletes the selected project from disk.		
Open Archive	• *Projects tab* | **Open Archive** button • *Projects tab* | *Right-click* > **Open Archive**	Opens a project from an archive file.	Import Archive	
Archive Project	• *Projects tab* | **Archive** button • *Projects tab* | *Right-click* > **Archive**	Saves the selected project to disk as a Mari archive (**.mra**) file.		The archive includes all the supporting files required for the project.
Copy (Duplicate) Project	• *Projects tab* | **Copy** button • *Projects tab* | *Right-click* > **Copy**	Creates a copy of the selected project. The new copy appears in the **Projects** tab.		

4 Preference Functions

The functions for how to access and edit preferences, toolbars, and shortcuts can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Set preferences	• *Menubar* | **Edit** > **Preferences**	Lets you set general preferences for Mari - cache size, plug-ins, autosave frequency, and so on.	Mari Preferences Dialog	
Edit toolbars	• *Menubar* | **Edit** > **Toolbars**	Lets you create and edit custom toolbars.	Manage Toolbar Dialog	
Edit shortcuts	• *Menubar* | **Edit** > **Shortcuts**	Lets you add or edit keyboard shortcuts.	Manage Keyboard Shortcuts Dialog	
Configure Heads-Up Display	• *Menubar* | **Edit** > **HUD Manager**	Lets you set what information Mari shows in the Heads-Up Display (HUD) behind the model on the canvas.	HUD Manager Dialog	

5 Selection Functions

A list of functions for selecting items in Mari can be found in the table below, this includes the selection of objects, patches, and faces, as well as how to access selection modes.

Function	How to access it	What it does	Opens this dialog box	Notes
Object selection mode	• **Selection** toolbar	 • *Menubar* | **Selection** > **Object Mode** • Right-click | canvas > **Object Mode**	Sets Mari to select whole objects.		
Patch selection mode	• **Selection** toolbar	 • *Menubar* | **Selection** > **Patch Mode** • *Right-click* | canvas > **Patch Mode**	Sets Mari to select patches on objects.		
Faces selection mode	• **Selection** toolbar	 • *Menubar* | **Selection** > **Face Mode** • *Right-click* | canvas > **Face Mode**	Sets Mari to select areas on the objects.		Create a smart selection in **Face** mode by double-clicking on the face of the model. This creates a smart selection (to select faces connected in UV) based on the settings in the **Smart Type** dropdown menu.

Function	How to access it	What it does	Opens this dialog box	Notes
Hide unselected areas	• *Menubar* | **Selection** > **Hide Unselected** • *Right-click* | canvas > **Visibility** > **Hide Unselected** • *Right-click* | Patches Palette > **Hide Unselected** • *Keyboard* | **Shift**+**H** • *Mouse* | 	Hides the unselected areas on the canvas.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gesture onscreen.)
Hide selected areas	• *Menubar* | **Selection** > **Hide Selected** • *Right-click* | canvas > **Visibility** > **Hide Selected** • *Right-click* | Patches Palette > **Hide Selected Patches** • *Keyboard* | **H** • *Mouse* | 	Hides the selected areas on the canvas.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.)
Show selected areas	• *Menubar* | **Selection** > **Show Selected** • *Right-click* | canvas > **Visibility** > **Show Selected** • *Right-click* | Patches Palette > **Show Selected Patches**	Shows the selected areas on the canvas.		

Function	How to access it	What it does	Opens this dialog box	Notes
Show all areas	• *Menubar* | **Selection** > **Show All** • *Right-click* | canvas > **Visibility** > **Show All** • *Right-click* | Patches Palette > **Show All Patches** • *Keyboard* | **Ctrl**/**Cmd**+**Shift**+**H** • *Mouse* | 	Displays all areas, selected or not, on the canvas.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.)
Show whole object	• *Menubar* | **Selection** > **Show Entire Object** • *Right-click* | canvas > **Visibility** > **Show Entire Object**	Shows all area, selected or not, on only the selected object.		
Select all areas	• *Menubar* | **Selection** > **Select All** • *Right-click* | canvas > **Selection** > **Select All** • *Right-click* | Patches Palette > **Select All Patches** • *Button* | Patches Palette >  • *Keyboard* | **Ctrl**/**Cmd**+**A**	Selects all areas in the model, depending on your current selection mode (objects, patches, or faces).		

Function	How to access it	What it does	Opens this dialog box	Notes
De-select all areas	• *Menubar* | **Selection** > **Select None** • *Right-click* | canvas > **Selection** > **Select None** • *Right-click* | Patches Palette > **Select None** • *Keyboard* | **Ctrl/Cmd+E**	De-selects all areas on the model.		
Invert selection of areas	• *Menubar* | **Selection** > **Select Invert** • *Right-click* | canvas > **Selection** > **Select Invert** • *Right-click* | Patches Palette > **Select Invert Patches** • *Keyboard* | **Ctrl/Cmd+I**	De-selects the current selection and selects everything currently unselected.		Depends on your current selection mode (either objects, patches, or faces) for the scope of inversion. For example, in face mode, the unselected faces become selected and vice versa.
Select visible areas	• *Menubar* | **Selection** > **Select Visible** • *Right-click* | canvas > **Selection** > **Select Visible** • *Right-click* | Patches Palette > **Select Visible Patches**	Selects only areas that aren't hidden.		
Lock unselected areas	• Menubar | **Selection** > **Lock Unselected** • Right-click | canvas > **Locking** > **Lock Unselected** • Right-click | Patches Palette > **Lock Unselected Patches**	Locks unselected patches so they cannot be edited.		

Function	How to access it	What it does	Opens this dialog box	Notes
Lock selected areas	• *Menubar* | **Selection** > **Lock Selected** • *Right-click* | canvas > **Locking** > **Lock Selected** • *Right-click* | Patches Palette > **Lock Selected Patches** • *Button* | Patches Palette > 	Locks selected areas, so they cannot be painted.		
Unlock selected areas	• *Menubar* | **Selection** > **Unlock Selected** • *Right-click* | canvas > **Locking** > **Unlock Selected** • *Right-click* | Patches Palette > **Unlock Selected Patches** • *Button* | Patches Palette > 	Unlocks selected locked areas, so they are again paintable.		
Lock all areas	• *Menubar* | **Selection** > **Lock All** • *Right-click* | canvas > **Locking** > **Lock All** • *Right-click* | Patches Palette > **Lock All Patches**	Locks all areas, so they cannot be painted.		

Function	How to access it	What it does	Opens this dialog box	Notes
Unlock all areas	• *Menubar* | **Selection** > **Unlock All** • *Right-click* | canvas > **Locking** > **Unlock All** • *Right-click* | Patches Palette > **Unlock All Patches**	Unlocks all locked areas, so they are again paintable.		
Unlock everything	• *Menubar* | **Selection** > **Unlock Entire Object** • *Right-click* | canvas > **Locking** > **Unlock Entire Object**	Unlocks everything on the current object, regardless of whether it's a face, patch, or channel.		
Create selection group for patches	• *Right-click* | canvas > **Create Patch Selection Set**	Creates a new selection set consisting of whichever patches you currently have selected.		Creates a new selection set in the Patches Palette
Create selection group	• *Right-click* | canvas > **Create Selection Group** • *Button* | Selection Groups Palette > 	Creates a new selection group to save your selection modes.		You can create selection groups in any selection mode (objects, patches, or faces).
Reselect selection group	• *Right-click* | selection group in Selection Groups Palette > **Select Selection Group** • *Button* | Selection Groups Palette > 	Reselects the current selection group.		

Function	How to access it	What it does	Opens this dialog box	Notes
Lock the selection group	• *Right-click* | selection group in Selection Groups Palette > **Lock Selection Group** • *Button* | Selection Groups Palette > 	Locks the selection group.		
Unlock the selection group	• *Right-click* | selection group in Selection Groups Palette > **Unlock Selection Group** • *Button* | Selection Groups Palette > 	Unlocks the selection group.		
Hide the selection group	• *Right-click* | selection group in Selection Groups Palette > **Hide Selection Group** • *Button* | Selection Groups Palette > 	Hides the contents of the selection group.		
Assign a shortcut	*Right-click* | selection group in Selection Groups Palette > **Assign Shortcut**	Opens the **Assign Keyboard Shotcut** dialog and allows you to set a shortcut for the selected object.		
Show the selection group	• *Right-click* | selection group in Selection Groups Palette > **Show Selection Group** • *Button* | Selection Groups Palette > 	Shows the contents of the selection group.		

Function	How to access it	What it does	Opens this dialog box	Notes
Remove the selection group	• Right-click | selection group in Selection Groups Palette > **Remove Selection Group** • Button | Selection Groups Palette > 	Removes the contents of the selection group.		
Add selection groups together	• **Shift**+click a selection group in Selection Groups Palette when another selection group is already selected.	Adds the two selection groups together on the canvas to show the visibility of both selections at once.		This does not create a new selection group automatically; it only adjusts the visible selections on the canvas.
Subtract selection groups from one another	• **Ctrl**+click a selection group in Selection Groups Palette when another selection group is already selected.	Subtracts one selection group from another on the canvas to show the visibility of a selection without the faces or patches of the other.		This does not create a new selection group automatically; it only adjusts the visible selections on the canvas.

6 Object Functions

A list of functions for adding, editing, moving, or removing objects can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Add object	• *Menubar* | **Objects** > **Add Object** • *Right-click* | Objects Palette > **Add Object** • *Button* | Objects Palette > 	Adds a new object to the project.	Add Objects	
Remove object	• *Menubar* | **Objects** > **Remove Object** • *Right-click* | an object in the Objects Palette > **Remove Object** • *Button* | Objects Palette > 	Removes the selected object from the project.		Projects must always have at least one object.
Add object version	• *Right-click* | an object in the Objects Palette > **Add Object Version**	Lets you select a file containing the new object version data.	Add Version	
Rename object version	• *Right-click* | an object in the Objects Palette > **Rename Object Version**	Renames the current object version.		
Remove object version	• *Right-click* | an object in the Objects Palette > **Remove Object Version**	Deletes the current object version.		Objects must always have at least one version.

Function	How to access it	What it does	Opens this dialog box	Notes
Calculate ambient occlusion	• *Menubar* | **Objects** > **Ambient Occlusion** • *Right-click* | an object in the Objects Palette > **Ambient Occlusion**	Calculates the ambient occlusion for the object. This is required for any operations that use the ambient occlusion data (such as using ambient occlusion masking).		This can take a long time, depending on the complexity of the model.
Reset Move Object - single object	• *Mouse* | **Shift**-click on the object	**Shift**-click on the object resets that object to its original position.		
Reset Move Object - all objects	• *Keyboard* | **'**	Pressing the **'** (apostrophe) key resets all objects back to their original positions.		
Assign a shortcut	*Right-click* | an object in the Objects Palette > **Assign Shortcut**	Opens the **Assign Keyboard Shotcut** dialog and allows you to set a shortcut for the selected object.		

7 Channel Functions

A list of functions for adding, editing, and removing channels and channels presets can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Add channel	• *Menubar* | **Channels** > **Add Channel** • *Right-click* | in Channels Palette > **Add Channel** • *Button* | Channels Palette > 	Adds a new channel to the current project.	Add Channel Dialog	
Create channel presets	• *Menubar* | **Channels** > **Channel Presets** • *Right-click* | in Channels Palette > **Channel Presets**	Allows you to create a new channel preset to use as a template for new channels.	Channel Presets Dialog	Click the checkbox for channels you want to add, and click **OK**. You can customize available categories of channel presets using an XML file in a folder specified in your preferences.
Remove channel	• *Menubar* | **Channels** > **Remove Channel** • *Right-click* | in Channels Palette > **Remove Channel** • *Button* | Channels Palette > 	Removes the selected channel, and any layers associated with it, from the channels list.		

Function	How to access it	What it does	Opens this dialog box	Notes
Convert channel	• *Menubar* | **Channels** > **Convert Channel** • *Right-click* | in Channels Palette > **Convert Channel** • *Button* | Channels Palette > 	Changes the color depth of the channel to either **8bit (Byte)**, **16bit (Half)**, or **32bit (Float)**.	Convert Type Dialog	Determines number of pixels per RGB channel.
Duplicate channel	• Keyboard | **Alt**+drag and drop channel	Duplicates the channel and all the layers belonging to that channel.		
Flatten channel	• Menubar | **Channels** > **Flatten** • *Right-click* | in Channels Palette > **Flatten**	Flattens the channel data and bakes down the texture.		
Channel transfer	• Menubar | **Channels** > **Transfer** • *Right-click* | in Channels Palette > **Transfer**	Transfers channels from one object or version to another.	Channel Transfer Dialog	
Cut channel	• Menubar | **Channels** > **Cut** • *Right-click* | in Channels Palette > **Cut** • *Keyboard* | **Ctrl**/**Cmd**+**X**	Cuts the channel and all associated layers from the channels list and places it in the clipboard.		
Copy channel	• Menubar | **Channels** > **Copy** • Right-click | in Channels Palette > **Copy** • Keyboard | **Ctrl**/**Cmd**+**C**	Copies the channel, and all associated layers from the channels list and places it in the clipboard.		

Function	How to access it	What it does	Opens this dialog box	Notes
Paste channel	• Menubar | **Channels** > **Paste** • Right-click | in Channels Palette > **Paste** • Keyboard | **Ctrl**/**Cmd**+**V**	Pastes any cut or copied channel and associated layers from the clipboard to the channels list.		
Export current channel	• *Menubar* | **Channels** > **Export Current Channel** • *Right-click* | canvas > **Export** > **Export Current Channel** • *Right-click* | in Channels Palette > **Export Current Channel**	Exports the current channel to a series of files.	Export Dialog	
Export all channels	• *Menubar* | **Channels** > **Export** > **Export All Channels** • *Right-click* | canvas > **Export** > **Export All Channels** • *Right-click* | in Channels Palette > **Export** > **Export All Channels**	Exports all the channels in the channels palette to a series of files.	Export Dialog	
Export everything	• *Menubar* | **Channels** > Export **> Export Everything** • *Right-click* | canvas > **Export** > **Export Everything** • *Right-click* | in Channels Palette > **Export** > **Export Everything**	Exports the channels for all the objects in your project to a series of files.	Export Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Flatten and export the current channel	• *Menubar* | **Channels** > **Export Flattened** > **Export Current Channel Flattened** • *Right-click* | canvas > **Export Flattened** > **Export Current Channel Flattened** • *Right-click* | in Channels Palette > **Export Flattened** > **Export Current Channel Flattened**	Flattens the current channel and exports it to a series of files.	Export Dialog	
Flatten and export all channels	• *Menubar* | **Channels** > **Export Flattened** > **Export All Channels Flattened** • *Right-click* | canvas > **Export Flattened** > **Export All Channels Flattened** • *Right-click* | Channels Palette > **Export Flattened** > **Export All Channels Flattened**	Flattens all the channels in the channels palette and exports it to a series of files.	Export Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Flatten and export everything	• *Menubar* | **Channels** > **Export Flattened** > **Export Everything Flattened** • *Right-click* | canvas > **Export Flattened** > **Export Everything Flattened** • *Right-click* | Channels Palette > **Export Flattened** > **Export Everything Flattened**	Flattens the channels for all objects in your project and exports them to a series of files.	Export Dialog	
Import into a layer stack	• *Menubar* | **Channels** > **Import** > **Import into Layer Stack** • Right-click | canvas > **Import** > **Import into Layer Stack** • *Right-click* | in Channels Palette > **Import** > **Import into Layer Stack**	Imports the file as layers into the layer stack of your current, selected channel.	Import Dialog	
Import into a new channel	• *Menubar* | **Channels** > **Import** > **Import into New Channel** • *Right-click* | canvas > **Import** > **Import into New Channel** • *Right-click* | in Channels Palette > **Import** > **Import into New Channel**	Import the file as a new channel in the Channels Palette.	Import Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Resize channel	• Menubar | **Channels** > **Resize** • *Right-click* | in Channels Palette > **Resize**	Resize options are: • **256x256** • **512x512** • **1024x1024** • **2048x2048** • **4096x4096** • **8192x8192** • **16384x16384** • **32768x32768** • **Half Size** • **Double Size**		
Lock channel	• Menubar | **Channels** > **Lock Channel** • Right-click | channel in Channels Palette > **Lock Channel** • Button | Channels Palette > 	Lock the selected channel so that the channel nor any of the layers in the associated layer stack can be edited or deleted.		Lock icons in the Channels Palette show the current state of the channel.
Unlock channel	• Menubar | **Channels** > **Unlock Channel** • Right-click | channel in Channels Palette > **Unlock Channel** • Button | Channels Palette > 	Unlocks the selected channel so that the channel or the layers within the layer stack can be edited.		Lock icons in the Channels Palette show the current state of the channel.
Lock all channels	• Menubar | **Channels** > **Lock All Channels** • Right-click | Channels Palette > **Lock All Channels**	Locks all the channels in the Channels Palette, regardless of what is selected.		

Function	How to access it	What it does	Opens this dialog box	Notes
Unlock all channels	*Menubar* | **Channels** > **Unlock All Channels** *Right-click* | Channels Palette > **Unlock All Channels**	Unlock all the channels in the Channels Palette, regardless of what is selected.		In addition to the unlock options listed here, you can also unlock channels by selecting **Unlock Entire Object.**
View the Next Channel	• *Menubar* | **Channels** > **Next Channel** • *Right-click* | in Channels Palette > **Next Channel** • *Mouse* | 	Selects the next channel in the list.		
View the Previous Channel	• Menubar | **Channels** > **Previous Channel** • Right-click | in Channels Palette > **Previous Channel** • Mouse | 	Selects the previous channel in the list.		
Snapshot all channels	• *Menubar* | **Channels** > **Snapshots** > **Snapshot All Channels** • *Right-click* | in Channels Palette > **Snapshots** > **Snapshot All Channels**	Takes snapshots of all the channels in the Channels Palette.		
Snapshot the current channel	• *Menubar* | **Channels** > **Snapshots** > **Snapshot Current Channel** • *Right-click* | in Channels Palette > **Snapshots** > **Snapshot Current Channel**	Takes snapshots of only the current selected channel.		

Function	How to access it	What it does	Opens this dialog box	Notes
Manage snapshots	• *Menubar* | **Channels** > **Snapshots** > **Manage Snapshots** • *Right-click* | in Channels Palette > **Snapshots** > **Manage Snapshots**	Opens the **Snapshots** palette.		
Delete all snapshots	• Menubar | **Channels** > **Snapshots** > **Delete All Snapshots** • Right-click | in Channels Palette > **Snapshots** > **Delete All Snapshots**	Deletes all the snapshots taken for the current project.		

8 Layer Functions

A list of functions for adding, editing, removing, exporting, or importing layers and layer stacks can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Add new layer	• Menubar | **Layers** > **Add New Layer** • *Right-click* | in Layers Palette > **Add New Layer** • *Button* | Layers Palette > 	Adds a new layer to the layer stack.		
Add adjustment layer	• Menubar | **Layers** > **Add Adjustment Layer** • Right-click | layer inLayers Palette > **Add Layer Adjustment** • Button | Layers Palette >  • Keyboard | **Tab**	Adds the selected filter as an Adjustment layer to the layer stack. Following the arrows in the Add Adjustment Layer menu leads to a choice of 25 adjustment layers.		If adding adjustments by pressing **Tab**, type in the name of the adjustment you want to add, for example, **Contrast**.
Add procedural layer	• Menubar | **Layers** > **Add Procedural Layer** • *Right-click* | in Layers Palette > **Add Procedural Layer** • *Button* | Layers Palette >  • *Keyboard* | **Tab**	Adds the selected **Basic**, **Environment**, **Geometry**, or **Procedural** layer to the layer stack. Following the arrows in the Add Procedural Layer menu leads to a choice of 27 procedurals.		If adding procedurals by pressing **Tab**, type in the name of the procedural you want to add, for example, **Cloud**.

Function	How to access it	What it does	Opens this dialog box	Notes
Cut layer or layer mask	• Menubar | **Layers** > **Cut** • Right-click | layer in Layers Palette > **Cut** • Menubar | **Layers** > **Layer Mask** > **Cut** • Right-click | layer mask in Layers Palette > **Layer Mask** > **Cut** • Keyboard | **Ctrl**/**Cmd**+**X**	Cuts the layer from the layers list to allow you to paste it elsewhere in the project or temporarily remove it.		Using the **Ctrl**/**Cmd**+**X** shortcut cuts the whole layer. You cannot cut only the layer mask.
Copy layer or layer mask	• Menubar | **Layers** > **Copy** • Right-click | layer in Layers Palette > **Copy** • Menubar | **Layers** > **Layer Mask** > **Copy** • Right-click | layer mask in Layers Palette > **Layer Mask** > **Copy** • Keyboard | **Ctrl**/**Cmd**+**C** or **Alt**+drag	Copies the layer from the layers list to allow you to paste it elsewhere in the project.		Using the **Ctrl**/**Cmd**+**C** shortcut copies the whole layer. You cannot copy only the layer mask.
Paste layer or layer mask	• Menubar | **Layers** > **Paste** • Right-click | layer in Layers Palette > **Paste** • Menubar | **Layers** > **Layer Mask** > **Paste** • Right-click | layer mask in Layers Palette > **Layer Mask** > **Paste** • Keyboard | **Ctrl**/**Cmd**+**V**	Pastes a cut or copied layer into the selected location in the project's Layers Palette. Layers can be paste as a copy in the layer list, or as a new layer in a mask stack or adjustment stack.		
Duplicate layer	• *Button* | Layers Palette > 	Creates an exact copy of the selected layer.		'Copy' is added to the layer name to denote which layer is the duplicate.

Function	How to access it	What it does	Opens this dialog box	Notes
Remove layers	• *Right-click* | layer in Layers Palette > **Remove Layers** • *Button* | Layers Palette > 	Removes the selected layer from the current project.		
Merge layers	• *Right-click* | layer in Layers Palette > **Merge Layers**	Merges two or more layers together into a single new layer.		Any masks or layer groups contained in the selection will also be merged into the layer and are no longer displayed as masks or groups.
Layer transfer	• Menubar | **Layers** > **Transfer** • Right-click | layer in Layers Palette > Transfer	Transfers layers from one object or version to another.	Layer Transfer Dialog	
Add empty layer group	• Right-click | in Layers Palette > **Add Layer Group** • Button | Layers Palette > 	Adds an empty layer group, which allows you to add layers, masks, adjustments or procedurals within a single layer group.		These layer groups can be flattened to create a single layer.
Group layers	• *Right-click* | layer inLayers Palette > **Group Layers**	Gathers multiple selected layers together under a single group.		Selected layers are located under a parent layer, which is given a 'group' name.
Flatten layer group	• Right-click | layer in Layers Palette > **Flatten Layer Group**	Reduces multiple layers into a single layer, where all the textures are still present.		

Function	How to access it	What it does	Opens this dialog box	Notes
Add mask	• Menubar | **Layers** > **Layer Mask** > **Add Mask** • Right-click | layer in Layers Palette > **Layer Mask** > **Add Layer Mask** • Button | Layers Palette > 	Adds a layer mask to the selected layer. Select **Reveal All**, **Hide All**, or to create **From Alpha**.		
Bake mask	• *Menubar* | **Layers** > **Layer Mask** > **Bake Mask** • *Right-click* | layer in Layers Palette > **Layer Mask** > **Bake Mask**	Bakes the mask into the layer, essentially flattening it.		
Resize Mask	• *Menubar* | **Layers** > **Layer Mask** > **Resize Mask** • *Right-click* | layer in Layers Palette > **Layer Mask** > **Resize Mask**	Resizes the mask to a size listed in the **Resize Mask** dropdown menu.		
Remove mask	• *Menubar* | **Layers** > **Layer Mask** > **Remove Mask** • *Right-click* | layer in Layers Palette > **Layer Mask** > **Bake Mask**	Remove the mask from the layer.		

Function	How to access it	What it does	Opens this dialog box	Notes
Make mask stack	• Menubar | **Layers** > **Layer Mask** > **Make Mask Stack** • Right-click | layer in Layers Palette > **Layer Mask** > **Make Mask Stack** • Button | Layers Palette > 	Creates a mask layer stack from a single mask on a layer. Requires the selected layer to have a mask, unless you are adding the mask stack using the **Add Mask Stack** button in the **Layers** palette.		Clicking the mask stack icon  opens an undocked mask stack palette.
Flatten mask stack	• Menubar | **Layers** > **Layer Mask** > **Make Mask Stack** • Right-click | layer in Layers Palette > **Flatten Mask Stack**	Reduces the masks in a mask stack back into a single mask on the layer.		
Enable mask	• Menubar | **Layers** > **Layer Mask** > **Enable Mask** • Right-click | in Layers Palette > **Layer Mask** > **Enable Mask**	Enables the mask to be viewed on the model.		
Disable mask	• Menubar | **Layers** > **Layer Mask** > **Disable Mask** • Right-click | in Layers Palette > **Layers Mask** > **Disable Mask**	Disables the mask from being viewed on the model. Disabling the mask only temporarily removes it from view.		To remove the mask entirely, simply **Remove Mask** in the same menu.
Convert Mask	• Menubar | **Layers** > **Layer Mask** > **Convert Mask** • Right-click | in Layers Palette > **Layers Mask** > **Convert Mask**	Converts the mask's texel format to either **8bit (Byte)**, **16bit (Half)**, or **32bit (Float)**. This works much the same way as converting a channel's texel format.		

Function	How to access it	What it does	Opens this dialog box	Notes
Add secondary adjustment	• Menubar | **Layers** > **Secondary Adjustment** > **Add Secondary Adjustment** • Right-click | adjustment layer in Layers Palette > **Secondary Adjustment**	Allows you to add another type of adjustment to the selected adjustment layer.		This only applies to adjustment layers. The option appears grayed out if the selected layer isn't an adjustment.
Remove secondary adjustment	• Menubar | **Layers** > **Secondary Adjustment** > **Remove Secondary Adjustment** • Right-click | adjustment layer in Layers Palette > **Remove Secondary Adjustment**	Removes any secondary adjustment that has been applied to the selected adjustment layer.		This only applies to adjustment layers. The option appears grayed out if the selected layer isn't an adjustment.
Add adjustment stack	• Menubar | **Layers** > **Adjustment Stack** > **Add Adjustment Stack** • Right-click | layer in Layers Palette > **Adjustment Stack** > **Add Adjustment Stack** • Button | Layers Palette > 	Adds an adjustment stack to the selected layer. Add an adjustment layer from the menu of 21 **Filter** adjustment layers.		This only applies to layers other than adjustment layers.
Bake adjustment stack	• Menubar | **Layers** > **Adjustment Stack** > **Bake Adjustment Stack** • Right-click | layer in Layers Palette > **Adjustment Stack** > **Bake Adjustment Stack**	Bakes an adjustment stack down, essentially flattening the stack into a single adjustment layer.		

Function	How to access it	What it does	Opens this dialog box	Notes
Remove adjustment stack	• Menubar | **Layers** > **Adjustment Stack** > **Remove Adjustment Stack** • Right-click | layer in Layers Palette > **Adjustment Stack** > **Remove Adjustment Stack**	Removes any adjustment stack that has been applied to the selected layer.		This only applies to layers other than adjustment layers.
Enable adjustment stack	• Menubar | **Layers** > **Adjustment Stack** > **Enable Adjustment Stack** • Right-click | layer in Layers Palette > **Adjustment Stack** > **Enable Adjustment Stack**	If an adjustment stack has been disabled, this option re-enables the adjustment stack.		This only applies to adjustment stacks that have been disabled. If a layer does not have an adjustment stack, or if the stack is already enabled, the option appears grayed out.
Disable adjustment stack	• Menubar | **Layers** > **Adjustment Stack** > **Disable Adjustment Stack** • Right-click | layer in Layers Palette > **Adjustment Stack** > **Disable Adjustment Stack**	Disables an adjustment stack to show the paint layer result as it is without the stack. Useful for comparing the model with and without the adjustment stack.		This only applies to adjustment stacks that have been added to a layer. If a layer does not have an adjustment stack, the option appears grayed out.
Convert to paintable	• Menubar | **Layers** > **Convert to Paintable** • Right-click | layer in Layers Palette > **Convert to Paintable**			

Function	How to access it	What it does	Opens this dialog box	Notes
Share Layer	• Menubar | **Layers** > **Sharing** > **Share Layer** • Right-click | layers in Layers Palette > **Sharing** > **Share Layer** • Shift+drag layer	Creates a shared layer in the layer stack.		
Unshare layer	• Menubar | **Layers** > **Sharing** > **Unshare Layer** • Right-click | layer in Layers Palette > **Sharing** > **Unshare Layer**	Undoes the shared state of the shared (created) layer and the original layer.		If sharing a layer as a channel, unsharing the layer to remove the shared state doesn't remove the channel from the Channels Palette. This needs to be done manually.
Share Layers As Channel	• Menubar | **Layers** > **Sharing** > **Share Layers As Channel** • Right-click | layers in Layers Palette > **Sharing** > **Share Layers As Channel**	Copies the selected layers into the Channels Palette as a new Channel. Clicking on the channel icon opens a new palette with the shared layer already listed.		
Make shared channel current	• Menubar | **Layers** > **Sharing** > **Make Shared Channel Current** • Right-click | layer in Layers Palette > **Sharing** > **Make Shared Channel Current**	Makes the shared channel the current channel in the **View Current Channel** option of the **Default Shaders** toolbar.		
Cache layer(s)	• Menubar | **Layers** > **Cache Layers** • Right-click | layer in Layers Palette > **Cache Layers**	Bakes the layer to speed up layer performance. Caching a layer caches it to the hard-disk.		

Function	How to access it	What it does	Opens this dialog box	Notes
Cache up to here	• Menubar | **Layers** > **Cache Up To Here** • Right-click | layer in Layers Palette > **Cache Up To Here**	Caches up to the current selected layer in the layer stack.		
Uncache layer(s)	• Menubar | **Layers** > **Uncache Layers** • Right-click | layer in Layers Palette > **Uncache Layers**	Release the cached files and unlocks the layer stack, allowing it to be edited again.		
Uncache layer up to here	• Menubar | **Layers** > **Uncache Up To Here** • Right-click | layer in Layers Palette > **Uncache Up To Here**	Releases the cached files and unlocks the layer stack up to the selected layer, allowing those layers to be edited again.		
Export selected layers	• Menubar | **Layers** > **Export** > **Export Selected Layers** • Right-click | layer in Layers Palette > **Export** > **Export Selected Layers**	Exports the selected layer to an external source.	Export Dialog	
Export all layers	• Menubar | **Layers** > **Export** > **Export All Layers** • Right-click | layer in Layers Palette > **Export** > **Export All Layers**	Exports all the layers in the layer stack to an external source.	Export Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Export selected masks	• Menubar | **Layers** > **Export** > **Export Selected Masks** • Right-click | layer in Layers Palette or shader in **Shader Layers** tab > **Export** > **Export Selected Masks**	Exports the mask of the selected layer(s) or layered shader(s).	Export Dialog	The masks for layers and layered shaders behave in the same way as they are in effect the same entity.
Export all masks	• Menubar | **Layers** > **Export** > **Export All Masks** • Right-click | layer in Layers Palette or shader in **Shader Layers** tab > **Export** > **Export All Masks**	Exports all the masks in a layer stack, in either the Layers Palette or the **Shader Layers** tab of the Shaders Palette.	Export Dialog	
Export selected layers flattened	• Menubar | **Layers** > **Export Flattened** > **Export Selected Layers Flattened** • Right-click | layer in Layers Palette > **Export** > **Export Selected Layers Flattened**	Exports the selected layer or layers flattened into a single file to an external source.	Export Dialog	
Export all layers flattened	• Menubar | **Layers** > **Export Flattened** > **Export All Layers Flattened** • Right-click | layer in Layers Palette > **Export** > **Export All Layers Flattened**	Exports all the layers in the layer stack flattened into a single file to an external source.	Export Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Export selected masks flattened	• Menubar | **Layers** > **Export Flattened** > **Export Selected Masks Flattened** • Right-click | layer in Layers Palette or shader in **Shader Layers** tab > **Export** > **Export Selected Masks Flattened**	Exports the mask of the selected layer(s) or layered shader(s) flattened into a single file to an external source.	Export Dialog	The masks for layers and layered shaders behave in the same way as they are in effect the same entity.
Export all masks flattened	• Menubar | **Layers** > **Export Flattened** > **Export All Masks Flattened** • Right-click | layer in Layers Palette or shader in **Shader Layers** tab > **Export** > **Export All Masks Flattened**	Exports all the masks in a layer stack, in either the Layers Palette or the **Shader Layers** tab of the Shaders Palette flattened into a single file to an external source.	Export Dialog	
Import into layer	• Menubar | **Layers** > **Import** > **Import into Layer** • Right-click | layer in Layers Palette > **Import** > **Import into Layer**	Selects a file with paint or mask data to be imported into the selected layer.	Import Dialog	
Import into layer stack	• Menubar | **Layers** > **Import into Layer Stack** • Right-click | layer in Layers Palette > **Import** > **Import into Layer Stack**	Selects a file with paint or mask data to be imported into the current layer stack.	Import Dialog	
Inspect layer properties	• *Right-click* | layer in Layers Palette > **Layer Properties**	Opens a separate window to display the properties of the selected layer.		

Function	How to access it	What it does	Opens this dialog box	Notes
Refresh layer view	• Right-click | in Layers Palette > **Refresh Layer View**	Refreshes the entire layer stack.		

9 Ptex Functions

A list of the functions for working with Ptex objects can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Double face resolution	• *Menubar* | **Ptex** > **Double Face Resolution** • *Button* | Ptex Toolbar > 	Double the selected face resolution.		
Halve face resolution	• *Menubar* | **Ptex** > **Halve Face Resolution** • *Button* | Ptex Toolbar > 	Halve the selected face resolution.		
Set the world space face resolution for the selected face	• *Menubar* | **Ptex** > **World Space Face Resolution** • *Button* | Ptex Toolbar > 	Set the world space face resolution for the selected face.		
Set the face resolution for the selected face	• *Menubar* | **Ptex** > **Set Face Resolution** • *Button* | Ptex Toolbar > 	Set the face resolution for the selected face.		
Fill selected faces with foreground color	• *Menubar* | **Ptex** > **Fill Faces Foreground** • *Button* | Ptex Toolbar > 	Fill the selected faces with the foreground color.		
Fill selected faces with background color	• *Menubar* | **Ptex** > **Fill Faces Background** • *Button* | Ptex Toolbar > 	Fill the selected faces with the background color.		

10 Patch Functions

A list of the functions for working with patches, including copying, filling, mirroring, and transforming patches, can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Extract patch	• *Menubar* | **Patches** > **Extract Selected** • *Right-click* | canvas > **Patches** > **Extract Selected**	Extracts the selected patches as images, and displays them in the Image Manager Palette.		You can only extract images up to 8K in resolution.
Select patches by number	• *Menubar* | **Patches** > **Select Range** • *Right-click* | canvas > **Patches** > **Select Range**	Lets you enter a series of patch numbers in order to select those patches.	Select Patches	
Copy selected patches to system clipboard	• *Menubar* | **Patches** > **Copy Indexes to Clipboard** • *Right-click* | canvas > **Patches** > **Copy Indexes to Clipboard** • *Right-click* | Patches Palette > **Copy Indexes to Clipboard**	Copies selected patch IDs to the system clipboard.		Copies the UDIM of the selected patch (es) to the system clipboard, for use in other applications.
Paste selected patch	• *Menubar* | **Patches** > **Quick Paste** • *Right-click* | canvas > **Patches** > **Quick Paste** • *Keyboard* | **Ctrl**/**Cmd**+**V**	Pastes a copied patch (from the clipboard).		

Function	How to access it	What it does	Opens this dialog box	Notes
Copy selected patch	*Menubar* | **Patches** > **Quick Copy** *Right-click* | canvas > **Patches** > **Quick Copy** *Keyboard* | **Ctrl**/**Cmd**+**C**	Copies the selected patch.		Only copies the paint baked onto the patch (does not copy unbaked paint).
Copy textures	• *Menubar* | **Patches** > **Copy Textures** • *Right-click* | canvas > **Patches** > **Copy Textures**	Copies multiple textures from selected patches.	Copy Multiple Textures Dialog	
Fill patches with black	• *Menubar* | **Patches** > **Fill** > **Black** • *Right-click* | canvas > **Patches** > **Fill** > **Black**	Fills the patch with black paint.		
Fill patches with gray	• *Menubar* | **Patches** > **Fill** > **Gray** • *Right-click* | canvas > **Patches** > **Fill** > **Gray**	Fills the patch with gray paint.		
Fill patches with white	• Menubar | **Patches** > **Fill** > **White** • Right-click | canvas > **Patches** > **Fill** > **White**	Fills the patch with white paint.		
Fill patches with foreground color	• *Menubar* | **Patches** > **Fill** > **Foreground** • *Right-click* | canvas > **Patches** > **Fill** > **Foreground**	Paints the selected patch(es) with the current foreground color.		

Function	How to access it	What it does	Opens this dialog box	Notes
Fill patches with background color	• *Menubar* | **Patches** > **Fill** > **Background** • *Right-click* | canvas > **Patches** > **Fill** > **Background**	Paints the selected patch(es) with the current background color.		
Fill patches with transparency	• *Menubar* | **Patches** > **Fill** > **Transparent** • *Right-click* | canvas > **Patches** > **Fill** > **Transparent**	Makes the selected patch(es) transparent.		
Fill patches with a UV mask	• Menubar | **Patches** > **Fill** > **UV Mask** • Right-click | canvas > **Patches** > **Fill** > **UV Mask**	Fills the selected patches with a black and white UV mask for the current layer's current paint component, if paintable.		
Fill patches with wireframe	• Menubar | **Patches** > **Fill** > **Wireframe** • Right-click | canvas > **Patches** > **Fill** > **Wireframe**	Fills the selected patches with a wireframe for the current layer's current component, if paintable.		
Copy the patch mask	• *Menubar* | **Patches** > **UV Mask to Image Manager** • *Right-click* | canvas > **Patches** > **UV Mask to Image Manager** • *Right-click* | patch in Patches Palette > **UV Mask to Image Manager**	Copies the outline (mask) of the UVs on the patch to the Image Manager.		

Function	How to access it	What it does	Opens this dialog box	Notes
Copy the patches wireframe	• *Menubar* | **Patches** > **UV Wireframe to Image Manager** • *Right-click* | canvas > **Patches** > **UV Wireframe to Image Manager**	Copies the wireframe of the UVs on the patch to the Image Manager.		
Extend the patch bleed area	• *Menubar* | **Patches** > **Bleed Patch Edges** • *Right-click* | canvas > **Patches** > **Bleed Patch Edges** • *Right-click* | in Patches Palette > **Bleed Patch Edges**	Extends the bleed area at the edges of the UV patches out to the edge of the entire patch.		
Flip patch vertically	• *Menubar* | **Patches** > **Transform** > **Flip Vertical** • *Right-click* | canvas > **Patches** > **Transform** > **Flip Vertical**	Flips the paint on the selected patch(es) vertically.		
Flip patch horizontally	• *Menubar* | **Patches** > **Transform** > **Flip Horizontal** • *Right-click* | canvas > **Patches** > **Transform** > **Flip Horizontal**	Flips the paint on the selected patch(es) horizontally.		
Rotate patch 90 degrees counterclockwise	• *Menubar* | **Patches** > **Transform** > **Rotate 90 CCW** • *Right-click* | canvas > **Patches** > **Transform** > **Rotate 90 CCW**	Rotates the paint on the selected patch(es) 90 degrees counterclockwise.		

Function	How to access it	What it does	Opens this dialog box	Notes
Rotate patch 90 degrees clockwise	• *Menubar* | **Patches** > **Transform** > **Rotate 90 CW** • *Right-click* | canvas > **Patches** > **Transform** > **Rotate 90 CW**	Rotates the paint on the selected patch(es) 90 degrees clockwise.		
Rotate patch 180 degrees	• *Menubar* | **Patches** > **Transform** > **Rotate 180** • *Right-click* | canvas > **Patches** > **Transform** > **Rotate 180**	Rotates the paint on the selected patch(es) 180 degrees.		
Mirror patch from left to right	• *Menubar* | **Patches** > **Mirror** > **Mirror Left to Right** • *Right-click* | canvas > **Patches** > **Mirror** > **Mirror Left to Right**	Mirrors the paint on the selected patch(es) from left to right.		
Mirror patch from right to left	• *Menubar* | **Patches** > **Mirror** > **Mirror Right to Left** • *Right-click* | canvas > **Patches** > **Mirror** > **Mirror Right to Left**	Mirrors the paint on the selected patch(es) from right to left.		
Mirror patch from top to bottom	• *Menubar* | **Patches** > **Mirror** > **Mirror Top to Bottom** • *Right-click* | canvas > **Patches** > **Mirror** > **Mirror Top to Bottom**	Mirrors the paint on the selected patch(es) from top to bottom.		

Function	How to access it	What it does	Opens this dialog box	Notes
Mirror patch from bottom to top	• *Menubar* | **Patches** > **Mirror** > **Mirror Bottom to Top** • *Right-click* | canvas > **Patches** > **Mirror** > **Mirror Bottom to Top**	Mirrors the paint on the selected patch(es) from bottom to top.		
Link selected patches	• *Menubar* | **Patches** > **Link** > **Link Selected Patch Images** • *Right-click* | canvas > **Link** > **Link Selected Patch Images** • *Right-click* | Patches Palette > **Link Selected Patch Images**	Links patches that have been selected in the **Patches** palette. This allows you to quickly replicate changes from one patch across multiple patches.		A colored box highlights linked patches in the UV view.
Unlink selected patches	• *Menubar* | **Patches** > **Link** > **Unlink Selected Patch Images** • *Right-click* | canvas > **Link** > **Unlink Selected Patch Images** • *Right-click* | Patches Palette > **Unlink Selected Patch Images**	Unlinks any linked patches that have been selected in the **Patches** palette.		Removes the colored box from the unlinked patches in the UV view.
Selects all patches linked to a specific patch	• *Menubar* | **Patches** > **Link** > **Select Linked Patch Images** • *Right-click* | canvas > **Link** > **Select Linked Patch Images** • *Right-click* | Patches Palette > **Select Linked Patch Images**	Selects all of the patches that have been linked to the specified patch selection, and highlights them in the **Patches** palette.		

Function	How to access it	What it does	Opens this dialog box	Notes
Unlinks all linked patches	• *Menubar* | **Patches** > **Link** > **Unlink All Linked Patch Images** • *Right-click* | canvas > **Link** > **Unlink All Linked Patch Images** • *Right-click* | Patches Palette > **Unlink All Linked Patch Images**	Unlinks all linked patches for the entire project.		
Resize patches	• *Menubar* | **Patches** > **Resize Selected** > Size • *Right-click* | canvas > **Resize Selected** > Size • *Right-click* | Patches Palette > **Resize Selected** > Size	Resizes the selected patches to the selected size, including options to double or halve the size.		

11 Shading Functions

A list of functions for adding, editing, removing, and toggling shaders, as well as how to change the lighting, can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Add new shader	• *Menubar* | **Shading** > **Add New Shader** • *Right-click* | in Shaders Palette > **Add New Shader** • *Button* | Shaders Palette > 	Adds a new shader from the choices: • **Phong**, • **Cook Torrance**, • **Beckman**, • **Blinn**, • **Flat**, • **sRGB Lighting**, • **BRDF**, • **Standard Lighting**, • **Layered**, and • **Choose Diffuse and Specular**.	**Create Shader Dialog** when selecting **Choose Diffuse and Specular.** Masks Formats Dialog when selecting **Layered**.	The **Choose Diffuse and Specular** option allows you to create a custom shader. Refer to the Create Shader Dialog for more information.

Function	How to access it	What it does	Opens this dialog box	Notes
Add new shader layer	• *Button* | Shaders Palette > **Shader Layers tab** > 	Adds a new shader to the layer stack for the selected layered shader: • **Phong**, • **Cook Torrance**, • **Beckman**, • **Blinn**, • **Flat**, • **sRGB Lighting**, • **BRDF**, • **Standard Lighting**, and • **Choose Diffuse and Specular**.	**Create Shader Dialog** when selecting **Choose Diffuse and Specular.**	The **Choose Diffuse and Specular**option allows you to create a custom shader. Refer to the Create Shader Dialogfor more information.
Duplicate shader	• *Menubar* | **Shading** > **Duplicate Shader** • *Right-click* | in Shaders Palette > **Duplicate Shader** • *Button* | Shaders Palette > 	Makes a copy of the selected shader.		
Delete shader	• Menubar | **Shading** > **Remove Shader** • *Right-click* | in Shaders Palette> **Remove Shader** • *Button* | Shaders Palette > 	Deletes the selected shader from the project.		
Cut shader	• *Right-click* | on shader in Shaders Palette > **Cut** • **Ctrl/Cmd+X**	Cuts the shader from the **Shaders** palette list and places it in the clipboard.		Default shaders cannot be cut or pasted.

Function	How to access it	What it does	Opens this dialog box	Notes
Copy shader	• *Right-click* | on shader in Shaders Palette > **Copy** • **Ctrl/Cmd+C**	Copies the shader from the **Shaders** palette list and places it in the clipboard.		Default shaders cannot be copied or pasted.
Paste shader	• *Right-click* | on shader in Shaders Palette > **Paste** • **Ctrl/Cmd+V**	Pastes the cut or copied shader from the clipboard into the **Shaders** palette list.		
add shader mask	• *Button* | Shaders Palette > **Shader Layers tab** > 	Adds a mask to the selected shader layer in the **Shader Layers** tab.		
add shader mask stack	• *Button* | Shaders Palette > **Shader Layers tab** > 	Adds a mask stack to the selected shader layer in the **Shader Layers** tab.		
remove shader layer	• *Button* | Shaders Palette > **Shader Layers tab** > 	Removes the shader layer from the layer stack in the **Shader Layers** tab.		
assign a color tag	• *Button* | Shaders Palette > **Shader Layers tab** > 	Assigns the selected shader a color tag that can be searched for with the color tag filter.		
Set lighting on main mesh to flat	• *Menubar* | **Shading** > **Flat** • *Toolbar* | 	Shades all pixels with the same value.		
Set lighting on main mesh to basic	• *Menubar* | **Shading** > **Basic** • *Toolbar* | 	Applies a basic lighting model.		

Function	How to access it	What it does	Opens this dialog box	Notes
Set lighting on main mesh to full	• *Menubar* | **Shading** > **Full** • *Toolbar* | 	Applies a full, configurable lighting model.		From within the **Lighting** palette, you can also adjust the four basic lights or the environment light. Mari saves these lighting values with the project.
Toggle shadows in the display	• *Menubar* | **Shading** > **Shadows** • *Toolbar* | 	Toggles whether to show the shadows in the display.		This does not enable or disable shadow processing. To enable shadow processing, enable **Depth Projections** in the **Preferences.** By default this preference is disabled.
Toggle wireframe view	• *Menubar* | **Shading** > **Toggle Wireframe** • *Keyboard* | **Shift**+**W** • *Toolbar* | 	Toggles whether to show the wireframes on the model.		
Toggle UV image rendering	• *Menubar* | **Shading** > **Toggle UvImage** • *Toolbar* | 	Shows the patches in the UV view as they appear after export, including the overspill areas.		
Toggle whole patch project	• *Menubar* | **Shading** > **Toggle Whole Patch Project** • *Toolbar* | 	Enables painting outside geometry shell boundaries in UV patches.		This is only available in UV views.

12 Painting Functions

A list of functions and shortcuts for painting and baking paint can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Undo all unbaked painting	• *Menubar* | **Painting** > **Clear Painting** • Toolbar |  • *Mouse* | 	Undo all painting not yet baked into the model (still in the paint buffer).		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.)
Undo	• *Menubar* | **Edit** > **Undo** • *Keyboard* | **Ctrl**/**Cmd**+**Z** • *Toolbar* |  • *Mouse* | 	Undo the last action.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.) See also the History View Palette.
Redo	• *Menubar* | **Edit** > **Redo** • *Keyboard* | **Ctrl**/**Cmd**+**Y** • *Toolbar* |  • *Mouse* | 	Redo the last (undone) action.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.) See also the History View Palette.

Function	How to access it	What it does	Opens this dialog box	Notes
Bake painting into the model	• *Keyboard* | **B** • *Menubar* | **Painting** > **Bake** • *Mouse* |  • *Statusbar* | 	Saves the painting as part of the project.		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.)
Show or hide painting	• *Keyboard* | **.**	Shows or hides the contents of the paint buffer (that is, the unbaked paint).		
Show or hide paintable areas (not currently masked out)	• *Menubar* | **Painting** > **Toggle Mask Preview** • *Keyboard* | **,** • Projection Palette | **Mask Preview** | **Mask Preview Enabled**	Shows or hides the current masking (including all masking currently turned on - the edge mask, channel mask, ambient occlusion mask, depth mask, and backface mask).		When this is on, this shows paintable areas normally, and unpaintable areas are colored.
Save current painting as a file	• *Menubar* | **Painting** > **Save Painting**	Saves the current unbaked paint (the contents of the paint buffer) as an **.exr** file.	Save Window Painting	Saves the paint buffer as an **.exr** file, and puts it in the Image Manager Palette.
Load previously saved painting files	• *Menubar* | **Painting** > **Load Painting**	Loads an **.exr** file and projects it onto the model as the current painting.	Load Window Painting	
Draw straight line between two points	• *Mouse* | Click, then **Shift**+click	Draws a line with the current brush between the two selected points.		

Function	How to access it	What it does	Opens this dialog box	Notes
Draw straight line horizontally or vertically	• *Mouse* | **Shift**+click and drag	Constrains painting to straight horizontal or vertical lines.		
Toggle Last Brush Tip	• *Mouse* |  • *Keyboard* | **N**	Switches to the last brush tip used.		

13 Filter Functions

A list of the filters available in Mari, where to find them, and how to apply them can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Invert filter	• *Menubar* | **Filters** > **Invert**	Inverts the colors in the selection's alpha channel. Replaces colors with their "opposite" in the color chart. For example, replaces a color with a float value of 0.3 with a color with float value 0.7.	Apply Invert	
Apply Luminosity filter	• *Menubar* | **Filters** > **Luminosity**	Outputs just the luminosity value of each pixel in the selection. That is, it outputs a grayscale image based on the brightness of every pixel in the original image.	Apply Luminosity	

Function	How to access it	What it does	Opens this dialog box	Notes
Apply In Blur filter	• *Menubar* | **Filters** > **Blur** > **Blur**	Applies a standard blur to the selection.	Apply Blur	You can select the blur radius - the number of pixels Mari uses when calculating the blur value for each pixel. The higher the radius, the more blurred the results. If you use a larger blur radius, you may get slight lines on the boundaries between patches. This is an artifact of the way that Mari handles patch edges. This filter is not supported with Ptex channels.
Apply Soften Blur filter	• *Menubar* | **Filters** > **Blur** > **Soften**	Applies a subtle softening blur. This is a quick, predefined blur filter. If you need more control over the degree or type of blurring, use either the standard **Blur** or **Gaussian Blur** filters.	Apply Soften	This filter is not supported with Ptex channels.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Gaussian Blur filter	• *Menubar* | **Filters** > **Blur** > **Gaussian**	Applies a Gaussian blur. Compared to the standard **Blur** filter, this gives you much finer control over the degree of blurring, and the option of using much higher blur values.	Apply Gaussian	You can select the blur radius. The higher the radius, the more blurred the results. If you use a higher blur radius, you may see artifacts along the boundaries of geometry shells and UV patches. This filter is not supported with Ptex channels.
Apply Gamma filter	• *Menubar* | **Filters** > **Gamma**	Changes the gamma levels in the selection.	Apply Gamma	**Do Inverse** reverses the gamma conversion. That is, a higher setting for **Gamma** results in a more washed-out looking image.
Apply sRGB To Linear Filter	• *Menubar* | **Filters** > **sRGB To Linear**	Applies an sRGB to linear colorspace conversion.	Apply sRGB To Linear	Checking **Invert** applies a linear to sRGB colorspace conversion.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Hue filter	*Menubar* | **Filters** > **Hue**	Changes the hue, saturation, and value of the colors on the model.	Apply Hue	To change the hue of the colors, set the value for Hue. This moves the colors around the color wheel. The rotation value is the degree around the color wheel that each color shifts, between 0 and 360 (which both correspond to the original colors). The options to change the **Saturation** are: • **Saturation** - how much saturation is applied. Select a multiplier from 0 to 2, where 1.00 is the original saturation value. • **Offset** - an offset value to add to the initial saturation value, before applying the scale. You can also edit the **Saturation** curve. This controls how the filter translates current saturation values to new values. For each input value along the bottom of the graph, the output value is set from the position of the line above that point. Edit the curve by:

Function	How to access it	What it does	Opens this dialog box	Notes
				• pulling the anchor points, • clicking between anchor points to add a new point, and • right-clicking to select from a set of preset values. You can edit the **Scale**, **Offset** and **Value** curve for the value of the colors in the same way.
Apply Brightness filter	• *Menubar* | **Filters** > **Brightness**	Changes the brightness of the paint, either overall or for specific color channels. You can also change the contrast.	Apply Brightness	You can either change the brightness of all color channels at once, or one-by-one. Changing the main **Brightness** control changes (overwrites) any changes you make to brightness values for individual color channels.
Apply Contrast filter	• *Menubar* | **Filters** > **Contrast**	Changes the contrast of the paint.	Apply Contrast	You can select the amount of contrast using the slider.
Apply Clamp filter	• *Menubar* | **Filters** > **Clamp**	Clamps color values to lie within the specified upper and lower values.	Apply Clamp	Set the **Upper Value** and **Lower Value** by adjusting the sliders or entering values in the entry boxes. Select the individual **Color Component** to clamp in the dropdown menu.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Levels filter	*Menubar* | **Filters** > **Levels**	Changes the color levels in the paint, by setting the white point, midtone, and black point.	Apply Levels	You can change the levels of all color components or each color component separately. You can set the: • **Color Component** - whether this affects all color components, or a specific one (**Red**, **Green**, or **Blue**). • **White Point** - the upper limit of displayed color intensity. Areas with a value higher than this are mapped to 1 (white). • **Midtone** - the middle point between white and black. Mari remaps the values so that this is the middle of the range between the white point and black point. Moving this pushes the values towards that end of the spectrum. • **Black Point** - the lower limit of displayed color intensity. Areas with a value lower than this are mapped to 0 (black).

Function	How to access it	What it does	Opens this dialog box	Notes
				• **White Output Level** - how strongly to output the white in the filtered image. Higher values show the entire white output, lower values show decreasing amounts. • **Black Output Level** - how strongly to output the black in the filtered image. Higher values show the entire black output, lower values show decreasing amounts.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Color Curves filter	• *Menubar* | **Filters** > **Color Curves**	Changes the color curve for each color component (RGB) in the painting.	Apply Color Curves	You can also edit each color curve, controlling how each color component appears on-screen. This controls how the filter translates current color values to new values. For each input value along the bottom of the graph, the output value is set from the position of the line above that point. Edit the curve by: • pulling the anchor points, • clicking between anchor points to add a new anchor point, • right-clicking to select from a set of preset values.
Apply Color Switches filter	• *Menubar* | **Filters** > **Color Switches**	Turns individual color components on or off.	Apply Color Switches	Use the checkboxes to select which color components are displayed. When Mari applies the filter, it removes any unchecked color components from the painting.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Tone Mapping filter	• *Menubar* | **Filters** > **Tone Mapping**	Varies the "exposure" of the painting.	Apply Tone Mapping	You can set the: • **White Point** - the upper limit of color intensity displayed; any colors of greater intensity map to white. • **Exposure** - lower exposures give darker images; higher exposures give lighter ones.
Apply Copy Channel filter	• *Menubar* | **Filters** > **Copy Channel**	Copies the value from one RGB color component to the other two. The result is a grayscale image with the intensity values from the selected component.	Apply Copy Channel	Select the source component from the list. When you apply the filter, Mari copies the selected component over the other two components.
Apply Premultiply Alpha filter	• *Menubar* | **Filters** > **Premultiply Alpha**	Either pre- or post-multiplies the alpha in the selected image. If you are painting using an image without pre-multiplied alpha onto one with it, use this filter to perform the pre-multiplication, so the images match and you avoid lines around the outside of the patch. Post-multiply works the same, but in reverse (removes pre-multiplication to match images that do not have pre-multiplied alphas).	Apply Premultiply Alpha	If the **Postmultiply** box is checked, the pre-multiplied alpha is removed.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Edge Detect filter	• *Menubar* | **Filters** > **Edge Detect**	Finds "edges" (transitions between colors) in the image and heightens them.	Apply Edge Detect	This filter is not supported with Ptex channels.
Apply Emboss filter	• *Menubar* | **Filters** > **Emboss**	Applies an "emboss" effect, so that textures look "raised" on the surface.	Apply Emboss	This filter is not supported with Ptex channels.
Apply Sharpen filter	• *Menubar* | **Filters** > **Sharpen**	Removes 'fuzziness' and clarifies detail in the image.	Apply Sharpen	You can set the amount of sharpening. Higher values mean more sharpening, while a value of 0.00 is the picture without the filter applied. This filter is not supported with Ptex channels.
Apply High Pass Filter	• *Menubar* | **Filters** > **High Pass**	Removes low frequency information from the image while maintaining higher frequency detail. This can be useful for quickly creating specular maps where only the higher frequency image highlights are maintained.	Apply High Pass	You can set the kernel size (the amount of filtering) by adjusting the **Radius**. If you use a large radius, you may get slight lines on the boundaries between patches. This is an artifact of the way that Mari handles patch edges. This filter is not supported with Ptex channels.

Function	How to access it	What it does	Opens this dialog box	Notes
Apply Color Correction filter	• *Menubar* | **Filters** > **Color Correction**	Applies a colorspace correction to the current channel or painting.	Apply Color Correction	You have the option to use Mari's default **Configuration File** or a custom one. Set the colorspace of the current channel or painting in the **Input ColorSpace** dropdown. Set the colorspace correction to apply to the current channel or painting in the **Output ColorSpace** dropdown.
Apply Add Noise filter	• *Menubar* | **Filters** > **Add Noise**	Applies noise to the current channel or painting.	Apply Add Noise	Use the **Amount** slider to adjust how much noise is applied and select the component you want to affect from the **Color Component** dropdown. For additive grayscale noise that modifies the intensity while retaining the original color, check the **Grayscale** checkbox. You can regenerate the noise using different random samples by dragging on the **Seed** slider. Adjust the size of the noise applied by dragging on the **Size** slider.

14 Camera Functions

A list of functions for using cameras, including how to project and unproject them, saving views and snapshots, and commands for moving the camera, can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
View all selected areas	• *Menubar* | **Camera** > **View All** • *Keyboard* | **A** • *Mouse* | 	Fills the canvas with all selected areas (or all objects in the project if nothing is selected).		For the mouse gesture: press and hold ****, click and drag in the direction indicated. (A thin red line traces gestures onscreen.)
Load FBX Camera	• *Menubar* | **Camera** > **Load Camera**	Loads a 3rd party **.fbx** camera view point of the current model. (The view point may seem arbitrary, depending on the model)	**Load Camera**	File format is **.fbx**
Project onto the front patches from the current view	• *Menubar* | **Camera** > **Quick Project Front**	Loads the data from the file set in the **Quick Projection** dialog. The result is projected onto the patches of the model visible from the current view, and baked on.	**Quick Projection** (if details have not already been set)	

Function	How to access it	What it does	Opens this dialog box	Notes
Project onto all images from the current view	• *Menubar* | **Camera** > **Quick Project Through**	Loads the data from the file set in the **Quick Projection** dialog. The result is projected onto all patches of the model (whether visible in the current view or not) and baked on.	**Quick Projection** (if details have not already been set)	
Unproject from the current view	• *Menubar* | **Camera** > **Quick Unproject**	Saves the current baked painting, as visible in the current view, to an image file (as set in the **Quick Projection** properties dialog box).	**Quick Projection** (if details have not already been set)	
Set up quick projection	• *Menubar* | **Camera** > **Quick Projection Settings**	Lets you set the image **Resolution**, **Path** and **Lighting** setup for the projected file.	**Quick Projection**	
Project from a layered PSD file.	• *Menubar* | **Camera** > **Layered Painting Project**	Manually loads the data from the PSD file set in the **Painting Projection** settings dialog. The result is projected onto all patches and relevant channels of the model and baked down.	**Painting Projection** (if details have not already been set)	
Unproject to a layered PSD file.	• *Menubar* | **Camera** > **Layered Painting Unproject**	Unprojects selected channels to a layered PSD file, set in the **Painting Projection** settings dialog, for further editing in an external image editor.	**Painting Projection** (if details have not already been set)	

Function	How to access it	What it does	Opens this dialog box	Notes
Set up layered projection.	• *Menubar* | **Camera** > **Layered Painting Projection Settings**	Opens the **Painting Projection** settings dialog.	**Painting Projection**	The **Painting Projection** settings dialog lets you set the following: • **Channels** - the channels to unproject. • **Resolution** - the image resolution of the unprojected channels. • **Path** - the filename and path of the PSD file. • **Image Editor** - the location of your image editor application binary. • **Watch Files** - whether external changes to the PSD file are automatically applied in Mari. • Reset Projection - whether the original position of the model is restored before the painting is projected onto it.
View left side of model	• *Menubar* | **Camera** > **Camera Left** • *Keyboard* | **1**	Changes the view to show the "left" side of the model.		Model's "left" (may seem arbitrary, depending on the model).
View right side of model	• *Menubar* | **Camera** > **Camera Right** • *Keyboard* | **2**	Changes the view to show the "right" side of the model.		Model's "right" (may seem arbitrary, depending on the model).

Function	How to access it	What it does	Opens this dialog box	Notes
View top of model	• *Menubar* | **Camera** > **Camera Top** • *Keyboard* | **3**	Changes the view to show the "top" of the model.		Model's "top" (may seem arbitrary, depending on the model).
View bottom of model	• *Menubar* | **Camera** > **Camera Bottom** • *Keyboard* | **4**	Changes the view to show the "bottom" of the model.		Model's "bottom" (may seem arbitrary, depending on the model).
View front of model	• *Menubar* | **Camera** > **Camera Front** • *Keyboard* | **5**	Changes the view to show the "front" the model.		Model's "front" (may seem arbitrary, depending on the model).
View back of model	• *Menubar* | **Camera** > **Camera Rear** • *Keyboard* | **6**	Changes the view to show the "rear" the model.		Model's "back" (may seem arbitrary, depending on the model).
Create a projector	• *Right-click* | in Projectors Palette > **Create Projector** • *Button* | Projectors Palette > 	Sets the current camera and paintable region, to frame a particular view on the model.		
Use the view saved in a particular projector	• *Right-click* | **Projector** in Projectors Palette > **Make Projector Current**	Changes the current view to the view set in the selected projector.		
Save the current camera view	• *Right-click* | **Projector** in Projectors Palette > **Save Projector** • *Button* | Projectors Palette > 	Saves the current projector (including all details of the view) to disk.	Save	

Function	How to access it	What it does	Opens this dialog box	Notes
Save all projectors defined in the project	• *Right-click* | in Projectors Palette > **Save All Projectors**	Saves all the projectors currently defined in the project. Mari saves all the projectors as a single file.		File format is **.mpc** (Mari Projector Collection).
Load projectors from disk	• *Right-click* | in Projectors Palette > **Load Projector** • *Button* | Projectors Palette > 	Loads one or more projectors from a file, and changes the current view to the first projector in the file.	Load	
Save a snapshot from a projector to a file	• *Right-click* | **Projector** in Projectors Palette > **Unproject**	Saves the current baked painting from the selected projector to an image file.	**Save Unprojected Image** (if **Output Path** has not been set yet)	
Load image data from the current projector	*Right-click* | **Projector** in Projectors Palette > **Project**	Loads the data from the file specified for that projector, projects it onto the model, and bakes it on.	**Pick Path** (if **Input Path** has not been set yet)	
Unproject multiple channels at once	• *Right-click* | **Projector** in Projectors Palette > **Batch Unproject**	Unprojects multiple channels at once.	**Batch Unproject**	
Project multiple channels at once	• *Right-click* | **Projector** in Projectors Palette > **Batch Project**	Projects onto multiple channels at once.	**Batch Project Dialog**	

Function	How to access it	What it does	Opens this dialog box	Notes
Load image data into the paint buffer from the current projector	• *Right-click* | **Projector** in Projectors Palette > **Import Image**	Loads the data from the file specified for that projector, and puts it into the paint buffer.	**Pick Path** (if Input Path has not been set yet)	
Load a projector	• *Right-click* | **Projector** in Projectors Palette > **Make Projector Current**	Displays the current project with that projector (camera and paintable region).		
Remove a projector	• *Right-click* | **Projector** in Projectors Palette > **Remove Projector** • *Button* | Projectors Palette > 	Deletes that projector.		
Generate a render turntable from a projector	• *Right-click* | **Projector** in Projectors Palette > **Render Turntable**	Takes the scene as viewed through the selected projector, and creates a series of images showing the scene rotating through an axis. You can include custom text or thumbnails of reference images in the turntable.	Render Turntable Dialog	
Generate a diagnostic turntable from a projector	• *Right-click* | **Projector** in Projectors Palette > **Diagnostic Turntable**	Takes the scene as viewed through the selected projector, and creates a turntable for a set of channels. The turntable has flat lighting and uses the default shader.	Diagnostic Turntable Dialog	

Function	How to access it	What it does	Opens this dialog box	Notes
Rotate	• *Mouse* | **Alt** and drag	Drag to rotate the model in different directions.		Keys plus mouse movement; uses last mouse click as pivot point.
Zoom	• *Mouse* | **Alt**+**Ctrl**/**Cmd** and drag left or right	Drag left to zoom out, right to zoom in.		Keys plus mouse movement.
Pan	• *Mouse* | **Alt**+**Shift** and drag	Drag the model to a different place on the canvas.		Keys plus mouse movement
Spin	• *Mouse* | **Ctrl**/**Cmd**+**R** and drag	Drag up to spin the model clockwise, left to spin counterclockwise		Keys plus mouse movement.
Focus	• *Keyboard* | **F**	Re-centers view on selected patch(es).		If no patches are selected, focuses on the center of the model.
Switch to Ortho Camera	• *Keyboard* | **F10**	Switches the canvas view to **Orthographic** mode.		
Switch to Perspective Camera	• *Keyboard* | **F11**	Switches the canvas view to **Perspective** mode.		Enables the **Near**, **Far**, and **FoV** fields. See Projectors palette fields for more information.
Switch to UV Camera	• *Keyboard* | **F12**	Switches the canvas view to **UV** mode.		
Reset the model position	• *Keyboard* | **1**	In the UV view, resets the model to its default position.		

Function	How to access it	What it does	Opens this dialog box	Notes
Rotate the model 90 degrees counter-clockwise	• *Keyboard* | **2**	In the UV view, rotates the model 90 degrees counter-clockwise from the default position.		
Rotate the model 180 degrees counter-clockwise	• *Keyboard* | **3**	In the UV view, rotates the model 180 degrees counter-clockwise.		
Rotate the model 270 degrees counter-clockwise	• *Keyboard* | **4**	In the UV view, rotates the model 270 degrees counter-clockwise.		

15 View Functions

A list of functions for changing your view and saving layouts can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
Set the display properties	• *Right-click* | main canvas > **Display Properties** • *Menubar* | **View** > **Display Properties**	Opens a dialog box allowing you to control how the main canvas displays.	Display Properties Dialog	
Save the current layout	• *Menubar* | **View** > **Save Layout**	Saves the current layout of your Mari workspace as a ***.mws** file.	Save Window Layout	Saves the position of palettes and other elements of the GUI.
Open a saved layout	• *Menubar* | **View** > **Load Layout**	Opens a saved layout (***.mws** file).	Load Window Layout	By default, Mari starts with the last-used layout.
Revert to the default layout	• *Menubar* | **View** > **Default Layout**	Resets the layout back to the Mari default.		
Save image of current canvas	• *Menubar* | **View** > **Take Screenshot**	Saves the current view of the canvas as an image file.		Various image formats available.
Adjust the screenshot settings	• *Menubar* | **View** > **Screenshot Settings**	Opens a dialog box that allows you to set how screenshots are saved.	Screenshot Settings	
Hide docked palettes	• *Menubar* | **View** > **Hide Palettes** • *Keyboard* | **Home**	Hides all docked palettes, so the canvas takes up the entire workspace.		The **Home** key cycles between showing all palettes, hiding undocked palettes, and hiding all palettes.

Function	How to access it	What it does	Opens this dialog box	Notes
Hide GUI components on canvas	• *Keyboard* | **/**	Hides displayed information (such as the histogram, heads-up display, etc) from the canvas.		
View a particular palette	• *Menubar* | **View** > **Palettes** ><palette name> • *Right-click* | **Menubar** or **Toolbar** > <palette name>	Displays the selected palette.		The palette re-displays in its last position.
Enter full screen mode	• *Menubar* | **View** > **Full Screen**	Enters full screen mode		Click **View** > **Full Screen** to exit full screen mode.

16 Tool Functions

A list of functions for managing plug-ins, imported custom content, and other tools can be found in the table below.

Function	How to access it	What it does	Opens this dialog box	Notes
View installed plug-ins	• *Menubar* | **Tools** > **Plug-ins**	Displays a list of installed plug-ins.	Plug-ins	Drag the edge of the dialog box, and column headings within, to display full content.
Imports Custom Brushes	• *Menubar* | **Tools** > **Import Brushes**	Allows you to select the custom Photoshop brush file that you want to import into Mari	Import Brushes	Photoshop custom brush files must be in the **.abr** file format.
Set the Mari cache location	• *Menubar* | **Tools** > **Cache Location Setup**	Lets you set the area to hold the Mari cache.	Cache Location	You can only add or remove additional cache locations when there are no projects. Once projects have been created for a given set of cache locations, that set must not be changed or project corruption will occur.

Function	How to access it	What it does	Opens this dialog box	Notes
Make changes to your license	*Menubar* | **Tools** > **License**	Lets you: • purchase, activate, and install licenses, • tell Mari where to find a license server, • obtain 15-day trial licenses, • see how many days remain before your license expires (if you are using a temporary license), • see your System ID (if you are using a node locked license), and • see your server name (if you are using a floating license).	Mari Licensing	You can only obtain a trial license for a major Mari release once on each machine. For example, if you had a trial license for Mari 1.1v1, you can't get another one for Mari 1.1v2 on the same machine.

17 Python Functions

A list of functions for working with Python and accessing the Python and API documentation can be found in the table below.

Function	How to access it	What it does	Notes
Execute example scripts	• *Menubar* | **Python** > **Examples**	Executes example scripts and displays results in the output pane of the **Python Console**.	
View Python API documentation	• *Menubar* | **Python** > **Documentation**	Displays the Python API documentation in a web browser.	
View Software API Overview documentation	• *Menubar* | **Python** > **Readme**	Displays the Software API Overview documentation.	An introduction to Python in Mari and GLSL shaders
Display Python Console	• *Menubar* | **Python** > **Show Console**	Displays the Python Console	

18 Help Functions

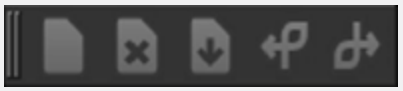
A list of the functions for accessing the documentation and training information in Mari can be found in the table below.

Function	How to access it	What it does	Notes
View information about Mari	• *Menubar* | **Help** > **About**	Displays the Mari info screen.	About this release, credits, and so on.
View the Mari Getting Started Guide	• *Menubar* | **Help** > **Getting Started**	Displays the basic guide to working with Mari.	
View the Mari User Guide	• *Menubar* | **Help** > **User Guide**	Displays the comprehensive, step-by-step guide to all Mari's functions.	
View the Mari Reference Guide	• *Menubar* | **Help** > **Reference Guide**	Displays the overall *Mari Reference Guide*.	
View the Mari Release Notes	• *Menubar* | **Help** > **Release Notes**	Displays a web page that links to the release notes	
View the Mari Training Resources web page.	• *Menubar* | **Help** > **Training and Tutorials**	Displays a web page with links to user guide assets and video tutorials.	
View Software API Overview documentation	• *Menubar* | **Help** > **SDK** > **API Overview**	Displays the Software API Overview documentation.	An introduction to Python in Mari and GLSL shaders.
View the Python API documentation and examples.	• *Menubar* | **Help** > **SDK** > **Python**	Displays the Python API documentation and a list of examples.	
View the C API documentation and examples.	• *Menubar* | **Help** > **SDK** > **C API**	Displays the C API documentation and a list of examples.	

19 Toolbars

The toolbars that are available in Mari are shown in the tables below, along with example images, the controls that can be found on each toolbar, and a list of descriptions of both the toolbar and the controls on it.

Project Toolbar

What it looks like	What it does
	Lets you perform common project functions, such as creating, closing and saving projects.

Project Toolbar Controls

Control	Type	What it does	Opens this dialog box	Notes
	button	Create a new project.	New Project Dialog	Name the project, select options, and add geometry.
	button	Close the current project.	**Save Changes Before Closing?** (if unsaved changes)	
	button	Save the current project.		
	button	Undo the last action.		See also History View Palette.
	button	Redo the last action.		See also History View Palette.

Lighting Toolbar

What it looks like	What it does
	Lets you change the lighting on the object. You can select one of the three lighting presets: flat, basic, or full, and toggle the use of shadows in the display. By default, lighting is relative to the scene, not the view. You can set individual lights to move with the view. Mari saves custom lighting with the project. If you need the same lights in another project, you need to set them up separately.

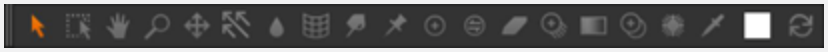
Lighting Toolbar Controls

Control	Type	What it does	Notes
	button	Set the lighting on the object to "flat".	In this mode, the position of the lights has no effect.
	button	Set the lighting on the object to "basic".	In this mode, you can move lights around on the canvas or make fine adjustments to lighting using the Lights Palette.
	button	Set the lighting on the object to "full".	In this mode, you can move lights around on the canvas or make fine adjustments to lighting using the Lights Palette.
	button	Toggles shadows on or off.	This does not enable or disable shadow processing. It simply controls whether the shadows are displayed or not. To enable shadow processing, enable **Depth Projections** in the **Preferences.** By default, this preference is disabled.

Painting Toolbar

What it looks like	What it does
	Clears all painting not yet baked into the model (still in the paint buffer).

Tools Toolbar

What it looks like	What it does
	Lets you select a tool for painting.

Tools Toolbar Controls

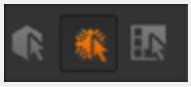
Control	Type	What it does	Opens this dialog box	Notes
	button	Activate the **Select** tool. This tool lets you select areas on the model(s) in your project.		You can select whole objects, patches, or areas on the surface of the objects. Once you have made a selection, you can choose to show or hide the selected areas, or to lock them for editing.
	button	Activate the **Marquee Select** tool. This tool lets you select areas on the screen, to control where you can apply paint.		When you've made a selection, paint only bakes down within the selected areas.

Control	Type	What it does	Opens this dialog box	Notes
	button	Activate the **Transform Paint Buffer** tool. This tool lets you resize, rotate, and move the paint buffer (and any unbaked paint in the buffer). It works on the entire paint buffer at once.		You can also make these transformations by manually editing the values under **Transform** in the **Paint Buffer** section of the Painting Palette.
	button	Activate the **Zoom Paint Buffer** tool. This tool lets you zoom in and out of the scene with the paint buffer locked to the object and without baking the paint.		You can also enable this tool by pressing **Z**. Zooming is reset when paint is baked.
	button	Activate the **Pan Object** tool. This tool lets you move objects and lights around on the canvas.		
	button	Activate the **Vector Inspector** tool. This tool lets you control the appearance of the directional markers for painted vectors.		You can opt to enable or disable the visibility of the directional markers in the **Vector Inspector** toolbar. If the markers don't appear when you select the tool, ensure that this option is set to enabled.
	button	Activate the **Blur** tool. This tool lets you blur paint already baked on a model.		If you want to blur large areas of the surface, you may want to use the blur Filter Functions instead. These apply a controlled blur to entire patches or objects. Mari includes several blur filters, including a controllable Gaussian blur.
	button	Activate the **Warp** tool. This tool lets you warp a selected area within your paint buffer. You create a warp box - a rectangle with between 4 and 64 control points.		

Control	Type	What it does	Opens this dialog box	Notes
	button	Activate the **Slerp** tool. This tool works like the Liquify tool in Adobe® Photoshop®. It lets you "pull" the contents of the paint buffer around.		As well as pulling, **Slerp** lets you grow, shrink, and rotate the paint. You can also use it to selectively erase distortions you've already applied.
	button	Activate the **Pinup** tool. This tool lets you works like the **Warp** tool, but lets you set your own control points (pins) wherever you want.		**Shift**-click to create a pin.
	button	Activate the **Paint** tool. This tool lets you draw paint strokes in the paint buffer.		
	button	Activate the **Vector Paint** tool. This tool lets you draw vector paint strokes in the paint buffer.		
	button	Activate the **Eraser** tool. This tool lets you erase paint from the paint buffer. It does not affect any underlying paint baked onto the model.		To clear the entire paint buffer, click the  button in the Painting Toolbar.
	button	Activate the **Paint Through** tool. This tool lets you position an image over an object, and then as you paint, paints the image "through" onto your model.		
	button	Activate the **Paint Gradient** tool. This lets you create a color gradient floating over your model, which you can paint through to stamp onto your model (like the **Paint Through** tool).		
	button	Activate the **Clone Stamp** tool. This tool lets you clone from an existing image, shown in a separate window. You set a source point on the image. As you paint, Mari copies the texture around that source point onto your model.		You can also clone stamp from painting already on an object, in the paint buffer, or in another channel.

Control	Type	What it does	Opens this dialog box	Notes
	button	Activate the **Towbrush** tool. This tool lets you lets you select areas of paint and drag them around the surface of your model. As you tow the paint around, it blends the edges of your selection with the surrounding paint. It works like the **CloneStamp** tool, but blends in the edges of the cloned selection.		
	button	Activate the **Color Picker/Pixel Analyzer** tool. This tool lets you pick a color from the paint on the model.		
Color swatch	button	Select a foreground color.	Select Color	
	button	Swap the foreground and background colors.		
Color swatch	button	Select a background color.	Select Color	
	button	Set the foreground color to white and the background color to black.		

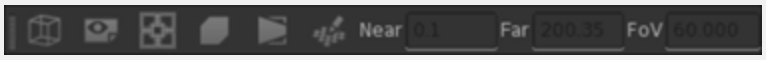
Selection Toolbar

What it looks like	What it does
	Lets you switch between three selection modes (objects, patches, and faces) when using the **Select** tool.

Selection Toolbar Controls

Control	Type	What it does	Notes
	button	Set Mari to select whole objects.	
	button	Set Mari to select patches on objects.	You can hold down **Shift** to add to the selection, **Ctrl**/**Cmd** to remove from the selection, and  (**Windows**) to intersect the selection.
	button	Set Mari to select areas on objects.	You can hold down **Shift** to add to the selection, **Ctrl**/**Cmd** to remove from the selection, and  (**Windows**) to intersect the selection. When using the **Select** tool, double-click on the face of the model to create a smart selection based on the settings in the **Smart Type** dropdown menu.

Canvas Toolbar

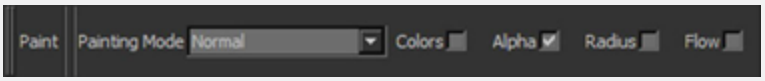
What it looks like	What it does
	Lets you set the view options for the UV and 3D views.

Canvas Toolbar Controls

Control	Type	What it does	Notes
	button	Toggle whether to show the wireframes on the model.	You can also press **Shift**+**W** to do this.

Control	Type	What it does	Notes
	button	Toggle between showing the patches in the UV view: • as they appear as part of the model, and • as they appear when exported (that is, as square images, with overpaint areas around the corners of the patches).	
	button	Toggle whether paint can be projected onto UV patches located outside the shells of the original geometry.	This control is only available in UV view.
	button	Switch to the orthographic camera view.	
	button	Switch to the perspective camera view.	In this view, you can set the near and far clipping planes and the field of view.
	button	Switch to the UV camera view (the **UV** tab). This gives you a "flat" view of the patches in the model.	
Near	entry box	Set the value for the near clipping plane. Mari doesn't display parts of the scene that are closer than the Near plane.	This control is only available in the perspective camera view.
Far	entry box	Set the value for the far clipping plane. Mari doesn't display parts of the scene that are further than the Far plane.	This control is only available in the perspective camera view.
FoV	entry box, slider	Set the value for the field of vision. This controls how much Mari distorts the view when applying perspective. At 0, the perspective camera gives exactly the same view as the ortho camera. As the value increases, the distortion increases.	This control is only available in the perspective camera view.

Tool Properties Toolbar

What it looks like	What it does
	Displays information about the selected tool.

Tool Properties Toolbar Control

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Facing**	dropdown	Set whether the selection only applies to the **Front** of the model as you can see it, or if the selection goes **Through** the model and includes the other side.		
		button	Activate **Rectangle Selection** mode. This lets you draw a rectangular selection.		This control only works in **Face** selection mode.
		button	Activate **Lasso Selection** mode. This lets you draw the outline of your selected area. You can draw any shape you want.		This control only works in **Face** selection mode.
		button	Activate the **Polygonal Lasso Selection** mode. This lets you draw the outline of your selected area by setting points between polygon sides until you close the selection.		You can close the selection by double-clicking on the canvas, pressing **Enter**, or clicking on the first point.
		button	Activate **Smart Selection** mode. This lets you create selections based on the surface of the model.		Smart selection only works in **Face** selection mode.

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Smart Type**	dropdown	Choose whether to base your smart selection on: • **Connectedness** - selects the areas on the model connected to the selected face. When you look at the area in the UV view, this selects the whole connected area within the current UV patch. If the UV patch holds several different areas, only those areas you click on are selected. • **Edge Angle** - selects based on the degree of change between neighboring faces. The selection goes until it hits an angle higher than the **Smart Angle**. • **Orientation** - selects the area that faces in the same direction as your initial selection.		This control only works in **Smart Selection** mode.

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Smart Angle**	entry box, slider	Set the maximum angle for the smart selection. • For **Edge Angles**, this sets the maximum angle between areas on the model surface. For example, if the angle is set to 30, this selects areas up to a 30 degree change of facing. • For **Orientation**, this sets how far from the facing of your original selection the selection goes to. For example, if the angle is set to 30, this selects areas up to 30 degrees away from the facing of your original selection.		This control only works in **Smart Selection** mode.
	All	button	Select all items.		
	None	button	Unselect all items.		
	Invert	button	Invert the current selection. Unselected areas become selected, and vice versa.		
	Grow	button	Grow the current selection.		This control only works in **Face** selection mode.
	Shrink	button	Shrink the current selection.		This control only works in **Face** selection mode.
	Grow/ Shrink by	dropdown	Choose whether to grow or shrink the current selection by **Vertex** or **Edge**.		This control only works in **Face** selection mode.

Tool	Control	Type	What it does	Opens this dialog box	Notes
		button	Activate **Rectangle Selection** mode. This lets you draw a rectangular selection.		
		button	Activate **Lasso Selection** mode. This lets you draw the outline of your selected area. You can draw any shape you want.		
		button	Activate the **Polygonal Lasso Selection** mode. This lets you draw the outline of your selected area by setting points between polygon sides until you close the selection.		You can close the selection by double-clicking on the canvas, pressing **Enter**, or clicking on the first point.
		button	Activate **Ellipse Selection** mode. This lets you draw an elliptical selection.		
		button	Activate **MagicWand Selection** mode. This lets you select by color. When you click, Mari creates a selection around the point you clicked. The selection is based on color – areas with a similar color to the original point are selected. You can change the color threshold for the selection.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Mode**	button	How drawing a new selection affects the current marquee selection: • **Replace** - the new selection replaces the existing selection. • **Transform** - this lets you move your selection area around (move, rotate, or scale the selection). In **Replace** mode (the default), you can: • hold down **Shift**, click and drag to add to the current selection, or • hold down **Ctrl**/**Cmd**, click and drag to remove from the current selection. In **Transform** mode, you can: • hold down **Shift**, click and drag to move the current selection, • hold down **Ctrl**/**Cmd**, click and drag to rotate the current selection, or • hold down **Shift**+**Ctrl**/**Cmd**, click and drag to scale the current selection.		
	Invert	button	Invert the current selection. Unselected areas become selected, and vice versa.		
	Clear	button	Clear the current selection.		
	Feathering	entry box	Soften the edges of the selection. Higher values give the selection a softer, fuzzier edge. At 0, the selection has a hard edge.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Reset Buffer**	button	Reset any transformations (moves, rotations, scales) applied to the paint buffer (and any unbaked paint in the buffer).		
	**Reset**	button	Reset the zoom level of the paint buffer.		
	Zoom In	button	Zoom in on the paint buffer.		
	Zoom Out	button	Zoom out of the paint buffer.		
	No properties.				
	**Reset**	button	Reset the settings of the vector inspector. Can also be done by using the **'** (apostrophe) shortcut when the vector inspector is active.		
	Enabled	checkbox	Enable (or disable) the visible directional markers for the vector paint tool. Can also be done by using the **Shift**+**I** shortcut.		
	Line spacing	entry box, slider	Adjust the spacing between the directional markers. Can also be done by **Shift**+dragging the mouse when the vector inspector is active.		
	Line length	entry box, slider	Adjust the length of the directional markers.		
	Start Color	button	Change the color at the base of the directional markers.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**End Color**	button	Change the color at the tip of the directional markers.		
	Vector Space	dropdown	Set whether the vector inspector operates in **ScreenSpace**, **TangentSpace**, or **WorldSpace**.		
	Same as Paint, plus:				
	Blur	entry box, slider	Set the blur strength. The higher the value, the more blur is produced.		
	**Clear**	button	Remove the current warp.		
	+	button	Increase the number of control points (up to 64) in the warp grid.		
	-	button	Decrease the number of control points in the warp grid.		
	Toggle Grid	button	Toggle between hiding and displaying the grid lines connecting the control points.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Mode**	dropdown	Select how to use the Slerp tool: • **Pull** - pulls paint around. • **Grow** - makes the paint in a specific area larger. • **Shrink** - makes the paint in a specific area smaller. • **Rotate** - rotates paint around. • **Erase** - lets you undo the distortion in a specific area of the painting. You can also: • press **'** (apostrophe) to undo all the distortions you've applied, or • press **;**(semicolon) to apply your changes to the paint buffer (that is, make them so you can't erase the distortions).		
	Radius	entry box, slider	Set the slerp radius (that is, how big the brush tip is).		
	Opacity	entry box, slider	Set the strength of the Slerp effect.		
	**Reset Pins**	button	Undo all the distortions you've applied, moving the pins back to their original positions.		
	Clear Pins	button	Remove all the current pins.		
	+	button	Increase the strength of the currently selected pin. Stronger pins pull more of the surrounding texture towards them.		
	-	button	Decrease the strength of the currently selected pin.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Apply	button	Apply your changes to the paint buffer and remove all current pins.		
	**Painting Mode**	dropdown	The blending mode used when the paint bakes down onto the channel surface. The default is **Normal** (paint in the buffer overwrites the surface), but Mari supports a number of other blending modes.		
	Colors	checkbox	Whether more pressure causes the color to vary (from slightly darker to the target color).		
	Alpha	checkbox	Whether more pressure increases the opacity.		
	Radius	checkbox	Whether more pressure increases the radius.		
	Flow	checkbox	Whether more pressure increases the flow.		
	Radius	entry box	Set how big the brush tip is (in pixels).		
	Opacity	entry box	How opaque the paint is. This is a multiplier on the paint buffer contents. At 1.0, the paint bakes down to the surface with the same opacity as it is in the buffer. At 0.5, the paint applied to the surface is half as transparent as when it's in the buffer.		
	Flow	entry box	Mimics how quickly paint is applied, by setting the maximum opacity in a splat.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Same as Paint				
	Same as Paint.				
	Same as Paint, plus:				
	Mode	dropdown	Select from two modes: • **Paint through** - you hover the image preview over the model and stamp it down onto the surface. • **Image clone** - you hover the image next to the model, set a source point, and clone from that point.		
	Stamp	button	Stamp the image straight onto the model.		
	Toggle Repeat	button	Toggle source image tiling on and off. If this is on, when you paint off the edge of the image, Mari repeats the image (so you always have source data).		
	**Tint**	button	Tint combines the foreground color with the paint through texture.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Stencil	dropdown	Stencil uses the **Paint Through** texture's alpha channel as a mask and paints the foreground color. There are three options available: • **No Stencil** - if this is selected, Mari ignores the stencil color and follows the alpha value. • **Stencil** - if this is selected, paint is applied to the foreground color. • **Inverted Stencil** - if this is selected, paint is applied in everything that is transparent.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Luminance	dropdown	Luminance uses the Paint Through texture's luminance instead of the alpha, but works similarly to **Stencil.** The following options exist within the same dropdown menu as the Stencil options: • **Luminance** - Works well for dirt, noise, and other similar images by using the luminance value of an image instead of the alpha. • **Inverted Luminance** - Similar to the luminance option, but the calculated luminance value is inverted before use.		
	Reset Image	button	Reset any transformations (such as moving, resizing, or rotating) you have made to the source image that you're cloning.		
	Pan Lock	checkbox	Lock the image position relative to the model. If you pan the model, the image that you're painting through pans too.		
	Scale Lock	checkbox	Lock the image size relative to the model. If you zoom the model in or out, the image that you're painting through zooms in or out too.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Same as Paint, plus:				
	Color swatch		Select the start color for the gradient.	**Select Color**	
	Color swatch		Select the end color for the gradient.	**Select Color**	
	In Point	entry box	How far through the gradient the start color lasts (before it starts graduating into the end color).		
	Out Point	entry box	How far through the gradient the end color reaches.		
	Type	dropdown	Select between **Linear** or **Radial** gradient. A linear gradient has a color at one end grading into the other color. A radial gradient has a color in the middle, radiating out in a circle to the other color on the outside.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Same as Paint, plus:				
	Source	dropdown	Clone from: • **Current Paint Target** - the model's surface (baked paint) in the active channel. • **Painting** - the current (unbaked) paint in the paint buffer. • **Image** - an external image (selected from the **Image Manager**, optionally zoomed in or out). • Any of the other channels in the project.		
		button	Clone from the selected region to another part of the surface.		
		button	Overwrite the selected region with another part of the surface.		
		button	Swap the contents of the selected region with another area on the surface.		
	**Sample Size**	entry box, slider	Radius in pixels that the eyedropper uses when sampling colors off the surface. The eyedropper takes the average value of all the pixels in this area, and sets this as the foreground color.		

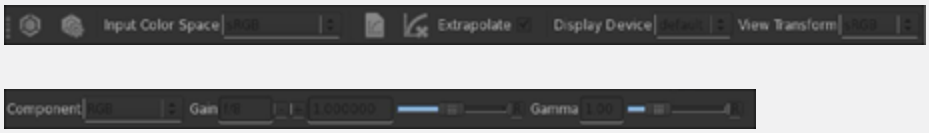
Ptex Toolbar

What it looks like	What it does
	Displays a number of options for managing Ptex faces within your project. This toolbar is only available for Ptex channels.

Ptex Toolbar Controls

Control	Type	What it does	Notes
	button	Double the selected face resolution.	
	button	Halve the selected face resolution.	
	button, entry box	Set the world space face resolution for the selected face.	Enter the **Texel Density** and then click  .
	button, dropdown	Set the face resolution for the selected face.	Select the **Size** and then click  .
	dropdown	Fill the selected faces with the foreground color.	
	button	Fill the selected faces with the background color.	

ColorSpace Toolbar

What it looks like	What it does
	Displays a number of options for managing colorspaces in Mari.

ColorSpace Controls

Control	Type	What it does	Notes
	button	Enable color management.	Click to toggle.
	button	Select a custom colorspace configuration file.	
	button	Select a custom LUT to apply to the scene.	
	button	Clear the current LUT applied to the scene.	
Extrapolate	checkbox	Sets whether the GPU extrapolates the grid values or clamps to the maximum value of the LUT.	
InputColor Space	dropdown	Set the colorspace of the scene.	
Display Device	dropdown	Set the colorspace of the display device used to view the scene.	
View Transform	dropdown	Select a colorspace transform to apply to the scene.	
Component	dropdown	View the individual color channels for the scene.	

Control	Type	What it does	Notes
Gain	incrementer, entry box, slider	Set the amount of exposure adjustment applied before the display transform.	You can boost or reduce Gain by entering a multiplier (exposure value), dragging on the slider, or adjusting the F-Stop value.
Gamma	entry box, slider	Set the amount of gamma correction applied after the display transform.	You can boost or reduce Gamma by entering a gamma level or dragging on the slider.

Navigation Toolbar

What it looks like	What it does
	Displays a number of options for managing navigation in Mari.

Navigation Toolbar Controls

Control	Type	What it does	Notes
	button	Resets all the options in the **Navigation toolbar** to the default settings.	
	button, dropdown	Provides the following options for panning: • **Pan All** - allows panning in any direction. • **Pan X** - allows panning on the x axis only. • **Pan Y** - allows panning on the y axis only. • **Pan Disabled** - disables all panning.	The button changes to reflect the selected option.

Control	Type	What it does	Notes
	button, dropdown	Provides the options to either enable or disable zooming.	The button changes to reflect the selected option.
	button, dropdown	Provides the options to either enable or disable rolling.	The button changes to reflect the selected option.
	button, dropdown	Provides the following options for orbiting: • **Orbit All** - allows orbiting around the model in any direction. • **Orbit X** - allows orbiting around the model on the x axis only. • **Orbit Y** - allows orbiting around the model on the y axis only. • **Orbit Disabled** - disables all orbiting.	The button changes to reflect the selected option.
	button, dropdown	Provides the following options: • **Snap 45 degrees** - when rotating the model it snaps at 45 degree angles. • **Snap 90 degrees** - when rotating the model it snaps at 90 degree angles. • **Snap angle disabled** - when rotating the model it does not snap to any angle.	The button changes to reflect the selected option.

Paint Buffer Symmetry Toolbar

What it looks like	What it does
	Displays the four options for the Paint Buffer Symmetry functionality.

Paint Buffer Symmetry Toolbar Controls

Control	Type	What it does	Notes
	button	This is the default setting. When mirroring is disabled, the paint buffer acts as normal and the paint strokes are not mirrored.	
	button	Mirroring left and right splits the paint buffer down the center vertically. Any paint strokes made on either the left or right side of the divider are mirrored on the opposite side.	This applies to paint strokes only.
	button	Mirroring top and bottom splits the paint buffer down the center horizontally. Any paint strokes made on either the top or bottom of the divider are mirrored on the opposite side.	This applies to paint strokes only.
	button	Mirroring four ways splits the paint buffer into quarters around the center of the canvas. Any paint strokes made in one of the quadrants are mirrored in the other three.	This applies to paint strokes only.

Vector Painting Toolbar

What it looks like	What it does
	Displays the option to toggle the vector inspector on or off and to create default vector shaders. When the tool is active, the vector inspector markers are shown, regardless of whether you toggle the option on or off.

Vector Painting Toolbar Controls

Control	Type	What it does	Notes
	button	Quickly enables the vector inspector so that the directional markers are visible. To quickly turn off the directional markers, click the button again.	Can also be done by using the **Shift**+**I** shortcut.
	button	Sets up two default vector shaders with default channels and layers for painting flow or normal maps. Also changes the tool to **Vector Paint** and switches the **Painting Mode** to **Paint Flow Vectors.**	Can also be done by navigating to **Python** | **Examples** > **Setup Vector Brush**.

Default Shaders Toolbar

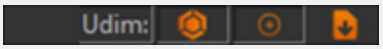
What it looks like	What it does
	Displays one of the four default shader in the **Shaders** palette: **Current Channel**, **Current Layer and Below**, **Current Layer**, and **Current Paint Target**. Selecting a custom created shader in the **Shaders** palette won't highlight any of the shaders in the toolbar, but selecting a default shader from either the palette or the toolbar activates the shader and highlights the icon in the toolbar.

Default Shaders Toolbar Controls

Control	Type	What it does	Notes
	button	Selects the default **Current Channel** shader from the **Shaders** palette and displays only the paint in the current channel.	
	button	Selects the default **Current Layer and Below** shader from the **Shaders** palette and displays only the paint in the current layer stack.	
	button	Selects the default **Current Layer** shader from the **Shaders** palette and displays only the paint in the current layer.	
	button	Selects the default **Current Paint Target** shader from the **Shaders** palette and displays only the paint of the currently selected target.	

20 Status Bar

The status bar and descriptions of all the controls on it can be found in the tables below.

What it looks like	What it does
	Displays status icons that indicate which features are active, whether an error has been encountered, and information about the current project. This includes progress bars on running processes.

Status Bar Icons

Icon	What it does	Notes
	Displays the UDIM number of the patch you have selected. If nothing is selected, then there is nothing listed after **Udim**.	
	Notifies you that there is paint to bake.	Click on the icon to bake.
	Notifies you that background jobs are currently running.	Clicking on this icon displays a dialog for the progress bar.
	Notifies you that the project has changed and allows you to save.	Click on the icon to save changes.
	Notifies you that your painting is hidden.	
	Notifies you that color management is active.	
	Notifies you that you are currently projecting on the front of objects.	Clicking on this icon toggles between projecting through objects and projecting on the front of objects. The  icon takes the default icon's place when switching to project through.

Icon	What it does	Notes
	Notifies you that you currently have edge masking enabled.	Clicking on this icon disables edge masking.
	Notifies you that you currently have channel masking enabled.	Clicking on this icon disables channel masking.
	Notifies you that you currently have ambient occlusion masking enabled.	Clicking on this icon disables ambient occlusion masking.
	Notifies you that you currently have depth masking enabled.	Clicking on this icon disables depth masking.
	Notifies you that you currently have backface masking enabled.	Clicking on this icon disables backface masking.
	Notifies you that you currently have fractal noise masking enabled.	Clicking on this icon disables fractal noise masking.
	Notifies you that you currently have the global mask preview enabled.	Clicking on this icon disables the global mask preview.
	Notifies you whether you are in LDR (Low Dynamic Range) or HDR (High Dynamic Range) mode.	Clicking on this icon toggles between LDR and HDR. When in HDR mode, the icon appears as  .
	Warns you that a low memory status has been detected. Low memory affects Mari's performance and may make it unstable.	Try freeing memory or closing and restarting Mari to clear this issue.
	Notifies you that there are warning messages present.	Clicking on this icon displays these warnings.
	Warns you that the cache disk is critically full.	If you don't free disk space, data loss may occur. A simple way to free disk space is to close the project and re-open it. Mari saves your session history, but closing your project clears this used disk space up for use.
	Warns you that there is no disk space left for the operation you are trying to run.	

Icon	What it does	Notes
	Warns you that channels are a higher bit-depth than what the virtual texture is configured for.	
	Notifies you that Mari is currently loading data from the disk.	
	Notifies you that Mari is currently loading data from the RAM to GPU memory.	
	Notifies you that Mari is listening for commands on [COMPUTER NAME] port [PORT NUMBER].	Hovering over this icon displays the computer name and port number on which Mari is listening for commands.
	Notifies you that there was an error while Mari was listening for commands.	
	Notifies you that Nuke is connected to send commands to Mari on [COMPUTER NAME] port [PORT NUMBER].	Hovering over this icon displays the computer name and port number from which Nuke is connected.

21 Channels Palette

The **Channels** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

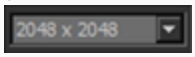
The **Channels** palette displays:

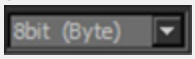
- a list of channels in the project,
- buttons to add, duplicate, convert, or remove channels,
- options for creating quick channels, and
- channel attribute information.

Channels provide a foundation that layers and layered shaders are built on. These channels can be diffuse, bump, or specular channels, to name only a few. Channels are assigned to lighting shaders, and sliders in that palette give you fine control over aspects of each channel.

Channels Palette Fields

Control	Type	What it does	Dialog	Notes
	button	Adds a new channel to the channels list.	Add Channel Dialog	
	button	Converts the channel into either **8bit (Byte)**, **16bit (Half)**, **32bit (Float)**.	Convert Type Dialog	
	button	Removes the channel.		

Control	Type	What it does	Dialog	Notes
Quick Channel | 	swatch	Creates a channel filled in black. The created channel is named **Quick Channel**. If there are multiple Quick Channels, then the name is followed with a number.		
Quick Channel | 	swatch	Creates a channel filled in white. The created channel is named **Quick Channel**. If there are multiple Quick Channels, then the name is followed with a number.		
Quick Channel | 	swatch	Creates a channel filled in mid-gray. The created channel is named **Quick Channel**. If there are multiple Quick Channels, then the name is followed with a number.		
Quick Channel | 	swatch	Creates a channel filled in transparent. The created channel is named **Quick Channel**. If there are multiple Quick Channels, then the name is followed with a number.		
Quick Channel | 	dropdown	Sets the channel size used when creating a Quick Channel, from the options: • **256x256** • **512x512** • **1024x1024** • **2048x2048** • **4096x4096** • **8192x8192** • **16384x16384** • **32768x32768**		Ensure this is set to the size you want before creating Quick Channels.

Control	Type	What it does	Dialog	Notes
Quick Channel | 	dropdown	Sets the channel depth used when creating a Quick Channel, from the options: • **8bit (Byte)** • **32bit (Float)** • **16bit (Half)**		Ensure this is set to the depth you want before creating Quick Channels.
	button	Opens an individual palette that displays the layers of that channel only.		
	button	Indicates an unlocked state. Clicking the icon changes the channel state to locked.		
	button	Indicates a locked state. Clicking the icon changes the channel state to unlocked.		
	button	Adds user attributes for the channel.		
<channel name> > *General* | **File Space**	information	Sets whether the channel is **Normal**, **Vector**, **Vector (flipped Y)**		
<channel name> > *General* | **Color Space**	information	Sets whether the channel is **Color** or **Scalar**.		
<channel name> > *General* | **Size**	information	Lists the size of the patches in the channel.		
<channel name> > *General* | **Depth**	information	Lists the color depth of the channel.		

22 Layers Palette

The **Layers** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

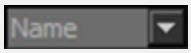
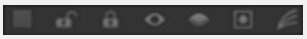
What It Does

The Layers palette lets you view, create and edit layers. You can also add the following to individual layers, or layer groups:

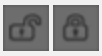
- masks
- adjustments
- procedurals
- shader layers

NOTE: For shader layers, the fields that are available to each shader are the same as those in the Shaders Palette chapter.

Layers Palette Fields

Control	Type	What it does	Notes
	dropdown, switch	Filter bar function that gives the choices: **Name**, **Type**, **Attribute**, and **Color Tag**. Depending on which filter option you select, the filter bar shows one of the following: •  - filter for the type of layers by clicking on the associated icons. •  - filter for the attributes of layers by clicking on the associated icons. •  - filter for the color tags of the selected color icon.	Both **Type** and **Attribute** provide icons that allow you to set the parameters for your filter. Quickly clear the entry box by pressing the  icon.
	dropdown	Click to select from the blend mode options available for individual layers. To adjust the blend amount, enter the value into the entry box, or adjust the slider located to the right of the blend mode menu. •  - adjusts the blend mode amount.	This list does not include the advanced blend mode options.
	button	Opens the **Advanced Blending** menu, which gives options for blend modes and components, as well as blend amount.	
	icon	Click to toggle the selected layers' visibility on the canvas.	
	icon	Denotes whether the layer is a paint layer and, when lit, whether it is selected as the current paint target.	

Control	Type	What it does	Notes
	icon	Denotes whether the layer is a mask layer and, when lit, whether the mask is selected as the current paint target.	**Shift**+click on the mask to disable it, or right-click on the layer and select **Layer Mask** > **Disable Mask**. The disabled mask icon  indicates the disabled state. To enable it, **Shift**+click on the mask again or select **Layer Mask** > **Enable Mask** from the right-click menu.
	icon	Denotes whether the layer has a mask stack and, when lit, whether the mask stack is selected as the current layer.	Clicking on the icon opens the mask stack palette.
	icon	Denotes whether the layer is an adjustment layer, or has an adjustment as part of the layer and, when lit, whether the adjustment is selected as the current layer.	To distinguish whether the layer is an adjustment layer or simply has an adjustment on it, look for the position of the icon. If the icon is in the left-most column, where the  icon is normally located on paint layers, then the layer is an adjustment layer.
	icon	Denotes whether the layer is a procedural layer and, when lit, whether the procedural is selected as the current layer.	
	icon	Denotes whether the layer is the parent layer of a group.	

Control	Type	What it does	Notes
	icon	Locks or unlocks the selected layer. If the layer is the parent of a group of layers, all the layers in the group are also locked or unlocked. Clicking the padlock icon when a layer is cached also unlocks it.	
	button	Adds a new paint layer to the layer stack.	
	button	Adds a mask to the selected layer or, if none is selected, the top layer in the layer stack.	If a mask has already been added to a layer, you cannot add a second mask using this method. You must create a mask stack using the right-click menu.
	button	Adds a mask stack to the selected layer, or if none is selected, the top layer in the layer stack.	Clicking on the mask stack icon opens the mask stack palette.
	button	Adds an adjustment layer to the layer stack.	Select adjustments from the dropdown menu when you click the icon.
	button	Adds an adjustment stack to the selected layer.	Select adjustments from the dropdown menu when you click the icon. Clicking on the adjustment stack icon opens the adjustment stack palette.
	button	Adds a procedural layer to the layer stack.	Select procedurals from the dropdown menu when you click the icon.
	button	Adds a parent layer for a group to the layer stack. Additional layers can be added after the parent layer is created.	

Control	Type	What it does	Notes
	button	Duplicates the selected layer in the layer stack.	The duplicate has "copy" included in the name so that it can be differentiated from the original.
	button	Removes the selected layer from the layer stack.	
	button	Assigns a color to the selected layers. To clear an already assigned color, click the icon and select the gray color in the center of the palette. This effectively removes the color and returns it to the default color state.	
Adjustment/Brightness			
Brightness	entry box, slider	Controls the brightness of the paint on the model.	
Adjustment/Brightness Lookup			
Map	curve editor	Adjusts the brightness to a specific lookup value using a curve map.	
Adjustment/Clamp			
Min	entry box, slider	Clamps the minimum RGB value for the selected checkboxes below.	
Max	entry box, slider	Clamps the maximum RGB value for the selected checkboxes below.	
Components | **R**	checkbox	If enabled, specifies that the red channel should be affected by the **Min** and **Max** sliders.	
Components | **G**	checkbox	If enabled, specifies that the green channel should be affected by the **Min** and **Max** sliders.	

Control	Type	What it does	Notes
Components | **B**	checkbox	If enabled, specifies that the blue channel should be affected by the **Min** and **Max** sliders.	
Components | **A**	checkbox	If enabled, specifies that the alpha channel should be affected by the **Min** and **Max** sliders.	
Adjustment/Color Balance			
Preserve Luminosity	checkbox	Ensures that the luminosity value is maintained when other values are adjusted.	
Highlights | **Cyan/Red**	entry box, slider	Adjusts the scale of the Red color component. Dragging the slider to the left pulls the scale towards cyan, whereas dragging the slider to the right pulls it towards red. The modification applies to the texture's highlights.	
Highlights | **Magenta/Green**	entry box, slider	Adjusts the Green color component. Dragging the slider to the left pulls the scale towards magenta, whereas dragging the slider to the right pulls it towards green. The modification applies to the texture's highlights.	
Highlights | **Yellow/Blue**	entry box, slider	Adjusts the Blue color component. Dragging the slider to the left pulls the scale towards yellow, whereas dragging the slider to the right pulls it towards blue. The modification applies to the texture's highlights.	
Shadows | **Cyan/Red**	entry box, slider	Adjusts the scale of the Red color component. Dragging the slider to the left pulls the scale towards cyan, whereas dragging the slider to the right pulls it towards red. The modification applies to the texture's shadows.	

Control	Type	What it does	Notes
Shadows | **Magenta/Green**	entry box, slider	Adjusts the Green color component. Dragging the slider to the left pulls the scale towards magenta, whereas dragging the slider to the right pulls it towards green. The modification applies to the texture's shadows.	
Shadows | **Yellow/Blue**	entry box, slider	Adjusts the Blue color component. Dragging the slider to the left pulls the scale towards yellow, whereas dragging the slider to the right pulls it towards blue. The modification applies to the texture's shadows.	
Midtones | **Cyan/Red**	entry box, slider	Adjusts the scale of the Red color component. Dragging the slider to the left pulls the scale towards cyan, whereas dragging the slider to the right pulls it towards red. The modification applies to the texture's midtones	
Midtones | **Magenta/Green**	entry box, slider	Adjusts the Green color component. Dragging the slider to the left pulls the scale towards magenta, whereas dragging the slider to the right pulls it towards green. The modification applies to the texture's midtones	
Midtones | **Yellow/Blue**	entry box, slider	Adjusts the Blue color component. Dragging the slider to the left pulls the scale towards yellow, whereas dragging the slider to the right pulls it towards blue. The modification applies to the texture's midtones.	
Adjustment/Color Lookup			
Red	curve editor	Adjusts the value of the red channel for the overall layer stack, using the curve editor.	
Green	curve editor	Adjusts the value of the green channel for the overall layer stack, using the curve editor.	
Blue	curve editor	Adjusts the value of the blue channel for the overall layer stack, using the curve editor.	

Control	Type	What it does	Notes
Adjustment/Color Switch			
Red	checkbox	Turns the red channel on or off. Disabling the red channel removes it from the painting.	
Green	checkbox	Turns the green channel on or off. Disabling the green channel removes it from the painting.	
Blue	checkbox	Turns the blue channel on or off. Disabling the blue channel removes it from the painting.	
Alpha	checkbox	Turns the alpha channel on or off. Disabling the alpha channel removes it from the painting.	
Adjustment/Color to Mask			
Color	swatch	Select a color from the color picker to convert that color to a mask. This allows a multi-colored channel to be used for multiple masks.	
Error	entry box, slider	The tolerance level of the mask to the selected color. The lower the number, the closer the RGB value has to be to the selected color in order for it to be treated as a mask; the higher the number, the more variation that's allowed.	
Adjustment/Contrast			
Contrast	entry box, slider	Adjusts the contrast for the layer stack.	
Contrast Pivot	entry box, slider	Sets the point around which **Contrast** is adjusted.	
Adjustment/Copy Channel			

Control	Type	What it does	Notes
Channel	dropdown	Copies the value from one RGB color channel to the other two. The result is a grayscale image with the intensity values from the selected channel.	
Adjustment/Gamma			
Gamma	entry box, slider	Adjusts the gamma levels in the layer stack.	
Invert	entry box, slider	Reverses the gamma conversion. That is, a higher setting for **Gamma** results in a more washed-out looking image.	
Adjustment/Grade			
Blackpoint	entry box, slider	Sets the blackpoint of the RGB values.	Blackpoint is the color value at which the input is considered to be 100% black.
Whitepoint	entry box, slider	Sets the whitepoint of the RGB values.	Whitepoint is the color value at which the input is considered to be 100% white.
Lift	entry box, slider	Lifts the blackpoint, while keeping the whitepoint the same.	
Gain	entry box, slider	Adjusts the whitepoint, while keeping the blackpoint the same	
Multiply	entry box, slider	Multiplies the value to lighten the texture while preserving the blackpoint.	
Offset	entry box, slider	Specifies a fixed value to add in order to lighten the texture.	Adding negative values essentially darkens the texture.
Gamma	entry box, slider	Adjusts the midtones, while keeping the whitepoint and blackpoint the same.	

Control	Type	What it does	Notes
Adjustment/HSL			
Hue Shift	entry box, slider	Adjusts the hue, as tied to the HSL, for the layer stack.	
Saturation Scale	entry box, slider	Adjusts the saturation level, as tied to the HSL, for the layer stack.	
Lightness Scale	entry box, slider	Adjusts the lightness level, as tied to the HSL, for the layer stack.	
Adjustment/HSV			
Hue Shift	entry box, slider	Adjusts the hue level, as tied to the HSV, for the layer stack.	
Saturation Scale	entry box, slider	Adjusts the saturation level, as tied to the HSV, for the layer stack.	
Value Scale	entry box, slider	Adjusts the value level, as tied to the HSV, for the layer stack.	
Adjustment/Height As Normal			
Bump Weight	entry box, slider	Adjusts the sensitivity of the bump weight when calculating height as a normal value.	
Adjustment/Hue Shift			
Hue	entry box, slider	Changes the RGB hue value of the paint in the layer stack.	
Adjustment/Invert			
Red	checkbox	Inverts the contents of the red color component when checked. Uncheck the parameter to leave the component unchanged. If there is a significant amount of red paint in your layer stack the inverse is a significant absence of red.	It is uncommon that only one component would be selected, however if the need arises, you can choose to invert only one, or a subset, of the four components.

Control	Type	What it does	Notes
Green	checkbox	Inverts the contents of the green color component when checked. Uncheck the parameter to leave the component unchanged. If there is a significant amount of green paint in your layer stack the inverse is a significant absence of green.	It is uncommon that only one component would be selected, however if the need arises, you can choose to invert only one, or a subset, of the four components.
Blue	checkbox	Inverts the contents of the blue color component when checked. Uncheck the parameter to leave the component unchanged. If there is a significant amount of blue paint in your layer stack the inverse is a significant absence of blue.	It is uncommon that only one component would be selected, however if the need arises, you can choose to invert only one, or a subset, of the four components.
Alpha	checkbox	Inverts the contents of the alpha color component when checked. Uncheck the parameter to leave the component unchanged.	It is uncommon that only one component would be selected, however if the need arises, you can choose to invert only one, or a subset, of the four components.
Adjustment/Levels			
Red	checkbox	Determines whether to apply the adjustment to the red component.	
Green	checkbox	Determines whether to apply the adjustment to the green component.	
Blue	checkbox	Determines whether to apply the adjustment to the blue component.	
Output Level | **WhiteOut**	entry box, slider	Adjusts the white level of the output in the paint for the selected color components.	
Output Level | **BlackOut**	entry box, slider	Adjusts the black level of the output in the paint for the selected color component.	

Control	Type	What it does	Notes
Input Level | **White**	entry box, slider	Adjusts the white level of the input for the selected color component.	
Input Level | **Mid**	entry box, slider	Adjusts the midtone level of the input for the selected color components.	
Input Level | **Black**	entry box, slider	Adjusts the black level of the input for the selected color component.	
Adjustment/Luminosity			
Adjustment/Premultiply Alpha			
Unpremultiply	checkbox	Either pre- or post-multiplies the alpha in the selected image. If you are painting using an image without pre-multiplied alpha onto one with it, use this filter to perform the pre-multiplication, so the images match and you avoid lines around the outside of the patch. Post-multiply works the same, but in reverse: it removes pre-multiplication to match images that do not have pre-multiplied alpha.	
Adjustment/Saturation			
Saturation	entry box, slider	Adjusts the color saturation of the paint in the layer stack.	
Adjustment/Scale			
R	entry box, slider	Adjusts the scale of the Red color component. Dragging the slider to the left pulls the scale towards cyan, whereas dragging the slider to the right pulls it towards red.	
G	entry box, slider	Adjusts the Green color component. Dragging the slider to the left pulls the scale towards magenta, whereas dragging the slider to the right pulls it towards green.	

Control	Type	What it does	Notes
B	entry box, slider	Adjusts the Blue color component. Dragging the slider to the left pulls the scale towards yellow, whereas dragging the slider to the right pulls it towards blue.	
A	entry box, slider	Adjusts the Alpha component.	
Adjustment/Set Value			
Channel	dropdown	The options available in the dropdown menu are Red, Green, Blue, Alpha.	
Value	entry box, slider	Adjusting the slider modifies the value of the component selected from the dropdown menu above.	
Adjustment/Shuffle			
R	dropdown	Select a color component from the options **r**, **g**, **b**, and **a** in the dropdown menu to replace the Red component with another color. Setting **r** in the dropdown menu keeps the red color in the Red component.	
G	dropdown	Select a color component from the options **r**, **g**, **b**, and **a** in the dropdown menu to replace the Green component with another color. Setting **g** in the dropdown menu keeps the green color in the Green component.	
B	dropdown	Select a color component from the options **r**, **g**, **b**, and **a** in the dropdown menu to replace the Blue component with another color. Setting **b** in the dropdown menu keeps the blue color in the Blue component.	

Control	Type	What it does	Notes
A	dropdown	Select a color component from the options **r**, **g**, **b**, and **a** in the dropdown menu to replace the Alpha component with another color. Setting **a** in the dropdown menu keeps the alpha color in the Alpha component.	
Adjustment/Tangent To Screen			
Suppress Blue	checkbox	Suppresses the blue value from the color-encoded vectors in screen space.	
Adjustment/Tangent To World			
Suppress Blue	checkbox	Suppresses the blue value from the color-encoded vectors in world space.	
Adjustment/World To Tangent			
Suppress Blue	checkbox	Suppresses the blue value from the color-encoded vectors in world space.	
Flip Y	dropdown	Choose whether to **Flip** the Y axis normals or leave them as they are with **normal**.	
Adjustment/sRGB2Linear			
Invert	checkbox	Applies an sRGB to linear colorspace conversion. Checking **Invert** applies a linear to sRGB colorspace conversion.	
Procedural/Basic/Color			
Color	swatch	Applies the specified color from the color swatch to the entire model.	
Procedural/Basic/Constant			
Constant	entry box, slider	Generates a constant number across the **RGB** or **RGBA** components that may be relied upon for mathematical operations.	This number ranges from 0 to 10,000, and defaults to 1.000.
Components	dropdown	Choose whether the contact applies to the **RGB** or **RGBA** components.	

Control	Type	What it does	Notes
Procedural/Basic/Vector			
X	entry box, slider	Adjusts the values of the X axis, which correspond to the Red color component, to modify the color-encoded vectors.	
Y	entry box, slider	Adjusts the values of the Y axis, which correspond to the Green color component, to modify the color-encoded vectors.	
Z	entry box, slider	Adjusts the values of the Z axis, which correspond to the Blue color component, to modify the color-encoded vectors.	
W	entry box, slider	Adjusts the values of the W axis, which correspond to the Alpha component, to modify the color-encoded vectors.	
Procedural/ Environment/Cubemap			
Cubic Image	entry box, file browser	The environment image you want to be reflected.	This procedural cannot be cached or baked and is for display purposes only.
Falloff Start	entry box, slider	Specifies where the cubic image starts.	
Falloff End	entry box, slider	Specifies where the cubic image ends.	
Procedural/ Environment/Cubemap Projector			
Cubic Image	entry box, file browser	Select or input the filepath to the **.dds** cubic image to project as a texture.	This procedural cannot be cached or baked and is for display purposes only.
Cull Backfaces	checkbox	When the checkbox is ticked, this setting ensures that projection does not affect areas facing away from the camera when factoring edge falloff.	

Control	Type	What it does	Notes
Offset	**X**	entry box, incrementer	The offset of the projected image along the **X** axis. This affects the position of where the camera sits in the scene.	
Offset	**Y**	entry box, incrementer	The offset of the projected image along the **Y** axis. This affects the position of where the camera sits in the scene.	
Offset	**Z**	entry box, incrementer	The offset of the projected image along the **Z** axis. This affects the position of where the camera sits in the scene.	
Rotation	**X**	entry box, slider	The rotation of the projected image along the **X** axis.	This rotates the camera for the entire scene, not just one part.
Rotation	**Y**	entry box, slider	The rotation of the projected image along the **Y** axis.	This rotates the camera for the entire scene, not just one part.
Rotation	**Z**	entry box, slider	The rotation of the projected image along the **Z** axis.	This rotates the camera for the entire scene, not just one part.
Edge Falloff	**Start**	entry box, slider	Modifies how far away the projection falloff starts on the model.	
Edge Falloff	**End**	entry box, slider	Modifies how far away the projection falloff ends on the model.	
Edge Falloff	**Curve**	curve editor	Modifies the otherwise linear shape of the edge falloff to your desired shape.	
Distance Falloff	**Start**	entry box, incrementer	Modifies the falloff start distance. From 0-100; 100 represents straight-on projection.	
Distance Falloff	**End**	entry box, incrementer	Modifies the falloff end distance. From 0-100; 100 represents straight-on projection.	
Distance Falloff	**Curve**	curve editor	Modifies the otherwise linear shape of the distance falloff to your desired shape.	

Control	Type	What it does	Notes
Procedural/Environment/Sphere Map			
SphereMap	file browser	The environment image you want to be reflected.	This procedural cannot be cached or baked and is for display purposes only.
FalloffStart	entry box, slider	Specifies where the spherical image starts.	
FalloffEnd	entry box, file browser	Specifies where the spherical image ends.	
Procedural/Environment/Sphere Map Projector			
Spherical Image	file browser	Uses a spherical image of any file type as a texture to project onto the model. Select the filepath to the spherical image to project as a texture.	
Cull Backfaces	checkbox	When the checkbox is ticked, this setting ensures that projection does not affect areas facing away from the camera when factoring edge falloff.	
Offset | **X**	entry box, incrementer	The offset of the projected image along the **X** axis. This affects the position of where the camera sits in the scene.	
Offset | **Y**	entry box, incrementer	The offset of the projected image along the **Y** axis. This affects the position of where the camera sits in the scene.	
Offset | **Z**	entry box, incrementer	The offset of the projected image along the **Z** axis. This affects the position of where the camera sits in the scene.	
Rotation | **X**	entry box, slider	The rotation of the projected image along the **X** axis.	This rotates the camera for the entire scene, not just one part.

Control	Type	What it does	Notes
Rotation | **Y**	entry box, slider	The rotation of the projected image along the **Y** axis.	This rotates the camera for the entire scene, not just one part.
Rotation | **Z**	entry box, slider	The rotation of the projected image along the **Z** axis.	This rotates the camera for the entire scene, not just one part.
Edge Falloff | **Start**	entry box, slider	Modifies how far away the projection falloff starts on the model.	
Edge Falloff | **End**	entry box, slider	Modifies how far away the projection falloff ends on the model.	
Edge Falloff | **Curve**	curve editor	Modifies the otherwise linear shape of the edge falloff to your desired shape.	
Distance Falloff | **Start**	entry box, incrementer	Modifies the falloff start distance. From 0-100; 100 represents straight-on projection.	
Distance Falloff | **End**	entry box, incrementer	Modifies the falloff end distance. From 0-100; 100 represents straight-on projection.	
Distance Falloff | **Curve**	curve editor	Modifies the otherwise linear shape of the distance falloff to your desired shape.	
Procedural/Environment/Triplanar Projection			
World Scale	entry box	Gives overall scale control for the image projection.	
Top | **Top Image**	file browser	Specifies the location of the image you want to project onto the top of your model.	
Top | **Top Repeat**	entry box, slider	Specifies the frequency at which the image is repeated across the top of your model.	
Top | **Top Angle**	entry box, slider	Specifies the rotation angle of the image on the top of your model.	
Top | **Top U Offset**	entry box, slider	Specifies how much the image on the top of your model is offset by on the U axis.	

Control	Type	What it does	Notes
Top | **Top V Offset**	entry box, slider	Specifies how much the image on the top of your model is offset by on the V axis.	
Top | **Top U Scale**	entry box, slider	Specifies how much the image on the top of your model is stretched or contracted on the U axis.	
Top | **Top V Scale**	entry box, slider	Specifies how much the image on the top of your model is stretched or contracted on the V axis.	
Top | **Top Falloff Start**	entry box, slider	Controls where the image projection starts on the top of the model.	
Top | **Top Falloff End**	entry box, slider	Controls where the image projection ends on the top of the model.	
Top | **Top Falloff**	curve editor	Controls the falloff of the image projection between the start and end values on the top of the model.	
Front | **Front Image**	file browser	Specifies the location of the image you want to project onto the front of your model.	
Front | **Front Repeat**	entry box, slider	Specifies the frequency at which the image is repeated across the front of your model.	
Front | **Front Angle**	entry box, slider	Specifies the rotation angle of the image on the front of your model.	
Front | **Front U Offset**	entry box, slider	Specifies how much the image on the front of your model is offset by on the U axis.	
Front | **Front V Offset**	entry box, slider	Specifies how much the image on the front of your model is offset by on the V axis.	
Front | **Front U Scale**	entry box, slider	Specifies how much the image on the front of your model is stretched or contracted on the U axis.	

Control	Type	What it does	Notes
Front | **Front V Scale**	entry box, slider	Specifies how much the image on the front of your model is stretched or contracted on the V axis.	
Front | **Front Falloff Start**	entry box, slider	Controls where the image projection starts on the front of the model.	
Front | **Front Falloff End**	entry box, slider	Controls where the image projection ends on the front of the model.	
Front | **Front Falloff**	curve editor	Controls the falloff of the image projection between the start and end values on the front of the model.	
Right | **Right Image**	file browser	Specifies the location of the image you want to project onto the side of your model.	
Right | **Right Repeat**	entry box, slider	Specifies the frequency at which the image is repeated across the side of your model.	
Right | **Right Angle**	entry box, slider	Specifies the rotation angle of the image on the side of your model.	
Right | **Right U Offset**	entry box, slider	Specifies how much the image on the side of your model is offset by on the U axis.	
Right | **Right V Offset**	entry box, slider	Specifies how much the image on the side of your model is offset by on the V axis.	
Right | **Right U Scale**	entry box, slider	Specifies how much the image on the side of your model is stretched or contracted on the U axis.	
Right | **Right V Scale**	entry box, slider	Specifies how much the image on the side of your model is stretched or contracted on the V axis.	
Right | **Right Falloff Start**	entry box, slider	Controls where the image projection starts on the side of the model.	

Control	Type	What it does	Notes
Right | **Right Falloff End**	entry box, slider	Controls where the image projection ends on the side of the model.	
Right | **Right Falloff**	curve editor	Controls the falloff of the image projection between the start and end values on the side of the model.	
Procedural/Geometry/Ambient Occlusion			
Procedural/Geometry/Position			
Procedural/Geometry/Surface Normal			
Procedural/Geometry/UDIM Mask			
UDIM	entry box	Enter the UDIM number of the UDIM you want to unmask.	
Procedural/Geometry/UV			
Procedural/Procedural/Fractal/ Cloud			
Size	entry box, slider	Adjusts the size of the cloud pattern.	
Roughness	entry box, slider	Adjusts the roughness of the cloud pattern. Dragging the slider to lower values smooths out the transition from color A to color B.	
Offsets | **X Offset**	entry box, slider	Moves the pattern across the model on the x axis.	
Offsets | **Y Offset**	entry box, slider	Moves the pattern across the model on the y axis.	
Offsets | **Z Offset**	entry box, slider	Moves the pattern across the model on the z axis.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's B input.	

Control	Type	What it does	Notes
Procedural/Procedural/Fractal/Turbulence			
Size	entry box, slider	Adjusts the size of the turbulence pattern.	
Roughness	entry box, slider	Adjusts the roughness of the turbulence pattern. Dragging the slider to lower values smooths out the transition from color A to color B.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's B input.	
Procedural/Procedural/Misc/Flow			
Animation | **Animated**	checkbox	Enables or disables the animation.	
Animation | **Time Offset**	entry box, slider	Adjusts the flow over time to view the effect of vector paint.	
Animation | **Speed**	entry box, slider	Adjusts the sensitivity of **Time Offset** to affect the speed of flow.	
Image | **Tile Image**	file browser	Selects the image to use on the model for flow.	
Image | **Repeat**	entry box, slider	Sets the repetition value of the tiled image.	
Procedural/Procedural/Misc/Oil			
Size	entry box, slider	Adjusts the size of the oil pattern.	
Organicness	entry box, slider	Sets the overall organic quality of the oil pattern.	

Control	Type	What it does	Notes
Roughness	entry box, slider	Adjusts the roughness of the oil pattern. Dragging the slider to lower values smooths out the transition from color A to color B.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's B input.	
Procedural/Procedural/Noise/Cellular			
Size	entry box, slider	Adjusts the size of the cellular pattern.	
Type	dropdown	Sets how color A and color B are used in the pattern.	
Distance Method	dropdown	Changes the shape of the cells to affect the distance the cells are from each other.	
Color | **Color A**	swatch	Sets the color to be used to the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	
Procedural/Procedural/Noise/Perlin			
Size	entry box, slider	Adjusts the size of the noise pattern.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	
Procedural/Procedural/Noise/Squiggle			
Size	entry box, slider	Adjusts the size of the squiggle pattern.	

Control	Type	What it does	Notes
Color | **Color A**	swatch	Sets the color to be used for the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	
Procedural/Procedural/ Pattern/Cube			
Repeat	entry box, slider	Specifies the repetition frequency of the cube pattern.	
Gap	entry box, slider	Sets the spacing between the cubes in the pattern.	
Fall Off	entry box, slider	Adjusts the falloff amount between the cubes.	
Roundness	entry box, slider	Adjusts how much the cubes are rounded off.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	
Procedural/Procedural/Pattern/Object Space Linear Gradient			
Start	entry box, slider	Sets the start point on the object for Color B of the gradient.	
End	entry box, slider	Sets the end point of Color B, where Color A begins, on the object of the gradient.	
Map	curve editor	Set the color A and color B transitions for the gradient using points on a curve.	
Rotation | **X**	entry box, slider	Adjusts how the gradient appears on the model by rotating the gradient on the X axis.	
Rotation | **Y**	entry box, slider	Adjusts how the gradient appears on the model by rotating the gradient on the Y axis.	

Control	Type	What it does	Notes
Rotation | **Z**	entry box, slider	Adjusts how the gradient appears on the model by rotating the gradient on the Z axis.	
Color | **Color A**	swatch	Sets the color to be used for the gradient's A input.	
Color | **Color B**	swatch	Sets the color to be used for the gradient's B input.	
Procedural/Procedural/Pattern/Sphere			
Size	entry box, slider	Adjusts the size of the spherical pattern.	
Falloff	curve editor	Adjusts the falloff amount between the spheres.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	
Procedural/Procedural/Pattern/Tiled			
Tile Image	file browser	The image you want to have tiled across the model.	
Rotation Angle (Degrees)	entry box, slider	Changes the angle of rotation for the tiled image.	
Offset | **U Offset**	entry box, slider	Specifies how much the image is offset by on the U axis.	
Offset | **V Offset**	entry box, slider	Specifies how much the image is offset by on the V axis.	
Repeat | **U Repeat**	entry box, slider	Specifies how much the image is repeated on the U axis.	
Repeat | **V Repeat**	entry box, slider	Specifies how much the image is repeated on the V axis.	

Control	Type	What it does	Notes
Mirror | **Mirror U**	entry box, slider	Sets whether the tiled image is mirrored on the U axis.	
Mirror | **Mirror V**	entry box, slider	Sets whether the tiled image is mirrored on the V axis.	
Procedural/Procedural/Pattern/UV Grid			
Color	swatch	Sets the color to be used for the grid lines.	
Repeat	entry box, slider	Specifies the repeat rate for the grid on the model's surface.	
Thickness	entry box, slider	Sets the thickness of the grid lines.	
Procedural/Procedural/Pattern/UV Linear Gradient			
Start	entry box, slider	Sets the start point on the UV patches for Color B of the gradient.	
End	entry box, slider	Sets the end point of Color B, where Color A begins, on the UV patches of the gradient.	
Map	curve editor	Set the color A and color B transitions for the gradient in UV space using points on a curve.	
Angle	entry box, slider	Specifies the angle of the linear gradient on the UV patches.	
Repeat	entry box, slider	Sets how much the linear gradient is repeated across the UV patches.	
Color | **Color A**	swatch	Sets the color to be used for the gradient's A input.	
Color | **Color B**	swatch	Sets the color to be used for the gradient's B input.	
Procedural/Procedural/Plant/Wood			
Size	entry box, slider	Adjusts the size of the wood pattern across the entire model.	

Control	Type	What it does	Notes
Bands	entry box, slider	Adjusts the size of the individual bands in the wood pattern.	
Noise | **Size**	entry box, slider	Adjusts the amount of the noise in the bands of the wood pattern.	
Noise | **Roughness**	entry box, slider	Adjusts the roughness of the wood pattern. Dragging the slider to lower values makes the transition from color A to color B more distinct.	
Stretch | **X**	entry box, slider	Stretches the wood pattern across the model on the x axis.	
Stretch | **Y**	entry box, slider	Stretches the wood pattern across the model on the y axis.	
Stretch | **Z**	entry box, slider	Stretches the wood pattern across the model on the z axis.	
Color | **Color A**	swatch	Sets the color to be used for the pattern's color A input.	
Color | **Color B**	swatch	Sets the color to be used for the pattern's color B input.	

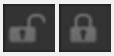
23 Patches Palette

The **Patches** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Patches** palette displays a selectable list of patches in the project, with icons and buttons to toggle whether they are visible, or whether they are locked. You can group patches into sets.

Patches palette fields

Control	Type	What it does	Opens this dialog box	Notes
Sorted by	dropdown	Lets you specify whether to list patches by: UDIM, or a custom sort (by dragging patches up and down the list).		
	icon	Click to toggle whether a patch is visible or not.		
	icon	Click to toggle whether a patch is locked or not.		
	button	Hide selected patches.		
	button	Show selected patches.		
	button	Select all patches.		
	button	Lock selected patches.		

Control	Type	What it does	Opens this dialog box	Notes
	button	Unlock selected patches.		
	button	Link selected patches. This allows you to replicate changes made to one patch onto all linked patches quickly and easily.		
	button	Unlink selected patches.		

24 Objects Palette

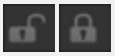
The **Objects** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Objects** palette displays the current objects in the project, and allows you to:

- Show and hide the objects.
- Add and remove objects from the project.
- Lock and unlock the objects.
- Select the object to edit.
- Add versions to existing objects.

Objects palette fields

Control	Type	What it does	Notes
Sorted by	dropdown	Lets you specify whether to list the objects by name , version number, or none.	
	icon	Click to toggle whether an object is visible or not.	
	icon	Click to toggle whether an object is locked or not.	
	button	Add another object to the project.	
	button	Removes the selected object from the project.	

Control	Type	What it does	Notes
	button	Allows you to add user attributes to the selected object.	
<object name> > *Geometry*	**Version**	dropdown	List of versions of the object, listed by the name of the source file. When you select a version from this list, Mari updates to show that version in the display.	
<object name> > *Info*	**Name**	text	The name of the object file.	You can edit this if required.
<object name> > *Rendering*	**Cast Shadows**	checkbox	Specify whether or not the object is set to cast shadows when **Depth Projections** are enabled and toggle shadows is set to show them on the canvas.	
<object name> > *State*	**Hidden**	checkbox	Whether the object is hidden.	
<object name> > *State*	**Locked**	checkbox	Whether the object is locked or editable.	
<object name> > *UserAttributes*	**Created**	info	The creation date of the model file.	
<object name> > *UserAttributes*	**Modified**	info	The last modification date of the model file.	
<object name> > *UserAttributes*	**Owner**	info	The user who made the last edit to the model file.	

25 Shaders Palette

The **Shaders** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Shaders** palette displays the lighting shaders and allows you to toggle between the shader setup for the current channel, layer stack, layer, and paint target, as well as custom-made shaders.

Shaders Palette Fields

Control	Type	What it does	Dialog	Notes
Current Channel	shader	Default shader that displays only the paint in the selected channel.		This shader can also be found on the **Default Shaders** toolbar.
Current Layer and Below	shader	Default shader that displays only the paint in your selected sub-stack (such as a mask or adjustment stack) up to the selected layer. If you don't have a sub-stack selected, it shows the parent stack up to the selected layer.		This shader can also be found on the **Default Shaders** toolbar.
Current Layer	shader	Default shader that displays only the paintable paint and masks in your selected layer.		This shader can also be found on the **Default Shaders** toolbar.

Control	Type	What it does	Dialog	Notes
Current Paint Target	shader	Default shader that displays only the paint in your selected layer, including any mask or mask stack, adjustment, filter or groups associated with the layer.		This shader can also be found on the **Default Shaders** toolbar.
	button	Adds a new shader or layered shader to the shader list in the palette from a dropdown menu list of: • **Phong** • **Cook Torrance** • **Beckman** • **Blinn** • **Flat** • **sRGB Lighting** • **BRDF** • **Standard Lighting** • **Layered** , and • **Choose Diffuse And Specular**.	Create Shader Dialog when selecting **Choose Diffuse and Specular**. Masks Formats Dialog when selecting **Layered**.	The **Choose Diffuse and Specular** option allows you to create a custom shader. Refer to the Create Shader Dialog for more information. The **Layered** option creates a layered shader. When selected, its layers can be accessed using the Shader Layers Tab Fields.
	button	Makes a copy of the selected shader.		
	button	Removes the shader from the shader list in the palette.		Default shaders cannot be removed from the **Shaders** palette.
	button	Selects the default **Current Channel** shader from the shader list and displays only the paint in the current channel.		

Control	Type	What it does	Dialog	Notes
	button	Selects the default **Current Layer and Below** shader from the shader list and displays only the paint in the current layer stack.		
	button	Selects the default **Current Layer** shader from the shader list and displays only the paint in the current layer.		
	button	Selects the default **Current Paint Target** shader from the shader list and displays only the paint of the currently selected target.		
Lambertian/Phong				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Shininess**	dropdown	The channel controlling the high shine areas for highlights in the specular shaded surface.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface. You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		

Control	Type	What it does	Dialog	Notes
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel to be used for the shader component.	Add Channel Dialog	
Diffuse	entry box, shader	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Shininess	entry box, slider	How much shininess the specularity appears to have on the shaded surface.		From 0 to 100; defaults to 30.
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.

Control	Type	What it does	Dialog	Notes
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		By default, Bump Mode is set to **Fast**.
Lambertian/Cook Torrance				

Control	Type	What it does	Dialog	Notes
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Roughness**	dropdown	The channel controlling the rough shaded surface for specularity.		
	button	Inverts the channel values of the selected channel.		
Inputs | **Specular IOR**	dropdown	The channel controlling the specularity for the index of refraction. This can be adjusted to the IOR value of the desired material.		
	button	Inverts the channel values of the selected channel.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface. You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		

Control	Type	What it does	Dialog	Notes
Inputs | **Ambient Occlusion**	entry box, slider	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	entry box, slider	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Roughness	entry box, slider	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From 0 to 1; defaults to 0.700.
Specular IOR Weight	entry box, slider	Adjust the IOR to the value of a specific material, or adjust the slider until you find the index of refraction that suits your needs.		From 0 to 5; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.

Control	Type	What it does	Dialog	Notes
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.

Control	Type	What it does	Dialog	Notes
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		By default, Bump Mode is set to **Fast**.
Lambertian/Beckman				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Roughness**	dropdown	The channel controlling the rough shaded surface for specularity.		
	button	Inverts the channel values of the selected channel.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface. You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		

Control	Type	What it does	Dialog	Notes
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Roughness	entry box, slider	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From 0 to 1; defaults to 0.700.
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.

Control	Type	What it does	Dialog	Notes
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Displacement Range**	entry box	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		By default, Bump Mode is set to **Fast**.

Control	Type	What it does	Dialog	Notes
Lambertian/Blinn				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Shininess**	dropdown	The channel controlling the high shine areas for highlights in the specular shaded surface.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface. You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		

Control	Type	What it does	Dialog	Notes
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Shininess	entry box, slider	How much shininess the specularity appears to have on the shaded surface.		From 0 to 100; defaults to 30.
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.

Control	Type	What it does	Dialog	Notes
Displacement	**Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement	**Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement	**Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement	**Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump	**Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump	**Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		By default, Bump Mode is set to **Fast**.
Flat					
Inputs	**Color**	dropdown	The channel controlling the RGB values of the shaded surface under flat lighting.		
Inputs	**Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.

Control	Type	What it does	Dialog	Notes
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
sRGB Lighting				
Inputs | **Diffuse Color**	dropdown	The channel controlling the sRGB diffuse color effect of the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.

Control	Type	What it does	Dialog	Notes
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 1; defaults to 0.600.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 1; defaults to 0.200.
Specular Roughness	entry box, sldier	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From .001 to .999; defaults to .500.
sRGB	checkbox	When the checkbox is selected, Mari changes the output colors from linear color space to sRGB color space. This can be used to set up a single shader that is sRGB, rather than setting the entire color profile in the **Color Manager** palette to sRGB.		
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.

Control	Type	What it does	Dialog	Notes
Displacement	**Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement	**Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement	**Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
BRDF					
Inputs	**Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs	**Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs	**Glossiness**	dropdown	The channel controlling the glossy areas for highlights in the specular shaded surface.		
		button	Inverts the channel values of the selected channel.		
Inputs	**Reflectance**	dropdown	The channel controlling the reflective effect of the shaded surface.		
Inputs	**Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		

Control	Type	What it does	Dialog	Notes
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface. You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 1; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 1; defaults to 1.
Glossiness	entry box, slider	How glossy the highlights appear on the shaded surface. The closer to 1 this is set, the more mirror-like the shaded surface appears.		From 0 to 1; defaults to .200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.

Control	Type	What it does	Dialog	Notes
Reflectance	entry box, slider	How much of the reflection appears on the shaded surface. The closer to 1 this is set, the higher the reflectiveness.		From 0 to 1; defaults to .200.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 100; defaults to 1.000.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 1.000.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		
Standard Lighting				

Control	Type	What it does	Dialog	Notes
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 1; defaults to 0.600.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 1; defaults to 0.200.
Specular Roughness	entry box, slider	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.

Control	Type	What it does	Dialog	Notes
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Layered				
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		
Displacement| **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.

Control	Type	What it does	Dialog	Notes
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Choose Diffuse and Specular | Minnaert/Phong				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Shininess**	dropdown	The channel controlling the high shine areas for highlights in the specular shaded surface.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface.		
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		

Control	Type	What it does	Dialog	Notes
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Shininess	dropdown	How much shininess the specularity appears to have on the shaded surface.		From 0 to 100; defaults to 30.

Control	Type	What it does	Dialog	Notes
Specular	dropdown	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Environment	dropdown	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Diffuse Falloff	entry box, slider	How much falloff is given to the diffuse input.		From 0 to 5; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Displacement Range**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		

Control	Type	What it does	Dialog	Notes
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		
Choose Diffuse and Specular | Minnaert/Cook Torrance				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		
Inputs | **Specular Roughness**	dropdown	The channel controlling the rough shaded surface for specularity.		
	button	Inverts the channel values of the selected channel.		
Inputs | **Specular IOR**	dropdown	The channel controlling the specularity for the index of refraction. This can be adjusted to the IOR value of the desired material.		
	button	Inverts the channel values of the selected channel.		

Control	Type	What it does	Dialog	Notes
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface.		You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	

Control	Type	What it does	Dialog	Notes
Diffuse	dropdown	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular	dropdown	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Roughness	dropdown	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From 0 to 1; defaults to 0.700.
Specular IOR Weight	dropdown	Adjust the IOR to the value of a specific material, or adjust the slider until you find the index of refraction that suits your needs.		From 0 to 5; defaults to 1.
Environment	dropdown	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Diffuse Falloff	entry box, slider	How much falloff is given to the diffuse input.		From 0 to 5; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.

Control	Type	What it does	Dialog	Notes
Displacement | **Displacement Scale**	entry box, slider	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Displacement Range**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		
Choose Diffuse and Specular | Minnaert/Beckman				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		

Control	Type	What it does	Dialog	Notes
Inputs | **Specular Roughness**	dropdown	The channel controlling the rough shaded surface for specularity.		
	button	Inverts the channel values of the selected channel.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface.		You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.

Control	Type	What it does	Dialog	Notes
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Roughness	entry box, slider	How "rough" the surface is by default. Rougher surfaces have the highlight spread more across the surface. Lower values mean the surface is smoother (specular lights are more concentrated), higher values mean it is rougher (specular lights are spread out more).		From 0 to 1; defaults to 0.700.
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Diffuse Falloff	entry box, slider	How much falloff is given to the diffuse input.		From 0 to 5; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.

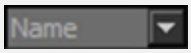
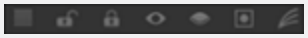
Control	Type	What it does	Dialog	Notes
Displacement | **Displacement Scale**	entry box, slider	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		
Displacement | **Displacement Range**	entry box	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		
Choose Diffuse/Specular | Minnaert/ Blinn				
Inputs | **Diffuse Color**	dropdown	The channel controlling the RGB diffuse color effect of the shaded surface.		
Inputs | **Specular Color**	dropdown	The channel controlling the RGB specular color effect of the shaded surface.		

Control	Type	What it does	Dialog	Notes
Inputs | **Specular Shininess**	dropdown	The channel controlling the high shine areas for highlights in the specular shaded surface.		
Inputs | **Normal**	dropdown	The channel used for input as a representation of the surface normals, added to the shaded surface.		You must select either a **Bump** or **Normal** shader component in the same shader. If you attempt to use both, **Normal** overrides the **Bump** shader component.
Inputs | **Bump**	dropdown	The channel controlling the bump map to show as a perturbed lighting.		
Inputs | **Environment Color**	dropdown	The channel controlling the reflective surface, using an image in a channel as the reflection, on the shaded surface.		
Inputs | **Ambient Occlusion**	dropdown	The channel controlling the ambient occlusion effect of the shaded surface. Using this input overrides the ambient occlusion values stored on the object (**Objects** > **Ambient Occlusion**).		
Inputs | **Emissive Color**	dropdown	The channel controlling the RGB color of the emissive (glow) qualities on the shaded surface.		
Inputs | **Vector**	dropdown	The channel controlling the vector field and resulting vector data from paint on the shaded surface.		This data is used by the vector inspector.
Inputs | **Displacement**	dropdown	The channel controlling the displacement map and dynamic tessellation to show a more advanced preview of displacement.		This component is disabled for Ptex channels.

Control	Type	What it does	Dialog	Notes
	button	Adds a new channel for the shader component.	Add Channel Dialog	
Diffuse	entry box, slider	How much of the diffuse input appears on the shaded surface.		From 0 to 2; defaults to 1.
Specular Shininess	entry box, slider	How much shininess the specularity appears to have on the shaded surface.		From 0 to 100; defaults to 30.
Specular	entry box, slider	How much of the specular light appears on the shaded surface.		From 0 to 2; defaults to 1.
Environment	entry box, slider	How much of the environment appears on the shaded surface.		From 0 to 2; defaults to 1.
Ambient	entry box, slider	How much ambient light appears on the shaded surface.		From 0 to 2; defaults to 0.200.
Ambient Occlusion	entry box, slider	How much ambient occlusion occurs on the shaded surface.		From 0 to 2; defaults to 1.
Emissive	entry box, slider	How much glow the emissive channel appears to have.		From 0 to 2; defaults to 1.
Diffuse Falloff	entry box, slider	How much falloff is given to the diffuse input.		From 0 to 5; defaults to 1.
Displacement | **Displacement Bias**	entry box, slider	How much the white or black values are pushed or pulled from the surface.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Scale**	entry box, slider	How much displacement is applied to the shaded surface. Lower values equal smaller displacement; higher values equal larger and more obvious displacement.		From 0 to 1; defaults to 0.500.
Displacement | **Displacement Range**	entry box	What the range of displacement is. This setting is multiplied by the **Displacement Scale** to give the displacement.		

Control	Type	What it does	Dialog	Notes
Displacement | **Max Tessellation**	entry box, slider	How many texels the surface is tessellated to.		From 1 to 64; defaults to 10.
Displacement | **Perturb Normals**	dropdown	Selecting **yes** changes the displacement so that displacement moves the surface but leaves the surface normals as they are.		
Bump | **Bump Weight**	entry box, slider	How much weight the bump map has. Lower values are smaller bumps, higher values are larger and more obvious displacements.		From 0 to 10; defaults to 0.100.
Bump | **Bump Mode**	dropdown	Whether you want bump to be displayed quickly (**Fast**) or accurately (**Accurate**).		

Shader Layers Tab Fields

Control	Type	What it does	Dialog	Notes
	dropdown, switch	Filter bar function that gives the choices: **Name**, **Type**, **Attribute**, and **Color Tag**. Depending on which filter option you select, the filter bar shows one of the following: •  - filter by the type of layers by clicking on the associated icons. •  - filter by the attributes of layers by clicking on the associated icons. •  - filter by the color tags of the selected color icon.		Both **Type** and **Attribute** provide icons that allow you to set the parameters for your filter. Quickly clear the entry box by pressing the  icon.
	dropdown	Click to select from the blend mode options available for individual layers. To adjust the blend amount, enter the value into the entry box, or adjust the slider located to the right of the blend mode menu. •  - adjusts the blend mode amount.		This list does not include the advanced blend mode options.
	button	Opens the **Advanced Blending** menu, which gives options for blend modes and components, as well as blend amount.		

Control	Type	What it does	Dialog	Notes
	button	Adds a new shader to the layer stack from a dropdown menu list of: • **Phong** • **Cook Torrance** • **Beckman** • **Blinn** • **Flat** • **sRGB Lighting** • **BRDF** • **Standard Lighting**, and • **Choose Diffuse And Specular**.	Create Shader Dialog when selecting **Choose Diffuse and Specular**.	The **Choose Diffuse and Specular** option allows you to create a custom shader. Refer to the Create Shader Dialog for more information.
	button	Adds a mask to the selected layer or, if none is selected, the top layer in the layer stack.		If a mask has already been added to a layer, you cannot add a second mask using this method. You must create a mask stack using the right-click menu.
	button	Adds a mask stack to the selected layer, or if none is selected, the top layer in the layer stack.		Clicking on the mask stack icon opens the mask stack palette.
	button	Removes the shader from the layer stack.		Default shaders cannot be removed from the **Shaders** palette.
	button	Assigns a color to the selected layers. To clear an already assigned color, click the icon and select the gray color in the center of the palette. This effectively removes the color and returns it to the default color state.		

26 Lights Palette

The **Lights** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Lights** palette displays the lights in your project, and allows you to:

- Customize the lights.
- Turn each light on or off.
- Move the lights around.
- Reposition a light to the current camera position.
- Render shadows for individual lights.

Lights palette fields

Control	Type	What it does	Notes
Sorted by	dropdown	Lets you specify whether to list lights by their name or in a custom order. To use a custom order, drag the lights up and down the list.	
	button	Lets you reposition the selected light to the current camera position.	
Environment > *Color* | **Intensity**	entry box, slider	Sets the intensity (brightness) of the selected light.	0.010 to 100.000; defaults to 1.000.

Control	Type	What it does	Notes
Environment > *General* | **Fixed To**	dropdown	Sets what the light is fixed to: • **Scene** (default) - the light is fixed to the model, for example if a light is set at the model's back, it always points at the model's back, no matter how you move the view. • **Camera** - the light is fixed to a camera view, for example you can have a light always shining from above the camera, allowing you to move the model around and cast light on different areas.	
Environment > *General* | **On**	checkbox	Whether the light is on or off.	
Environment > *Texture* | **Up Axis**	dropdown	Sets the image being used for the environment light to either **Axis X**, **Axis Y** (default), or **Axis Z**. This adjusts both the background (canvas) image and the lighting on the model.	
Environment > *Texture* | **Rotation**	entry box, slider	Rotates the background image and the lighting on the Y axis.	0.000 to 360.000 degree rotation; defaults to 0.000.
Environment > *Texture* | **Background**	dropdown	Toggles the visibility of the background (canvas) image by selecting **Show** or **Hide**. This does not turning on or off the lighting, only the image on the canvas.	
Environment > *Texture* | **Resolution**	dropdown	Sets the resolution of the lighting to either **64**, **128**, or **256**. This does not affect the resolution of the background (canvas) image.	
Environment > *Texture* | **Cubemap Type**	dropdown	Sets how the cubemap is handled: either **None**, **LatLong**, or **Cross**. If a 2D image is being used for the environment light, this option specifies the method used for interpreting the image into a cubemap. When a 2D image is brought into the **Image** field, Mari attempts to set the **Cubemap Type** automatically, but this can be changed at any time.	

Control	Type	What it does	Notes
Environment > *Texture* | **Image**	arrows, button, file browser	Click the blank image space to choose an environment from the Mari Environment library. Clicking either of the arrow keys cycles backwards or forwards through the Mari Environment library, loading the image as it does. Clicking the file browser opens the **Open an Image** dialog. Select an image of any of the file formats listed in the **File of Type** field. You can also drag-and-drop an image from the **Image Manager** or a file browser onto the blank image space to load the image as an environment light.	For more about the options in the dialog, refer to Open an Image Dialog.
Environment > *Texture* | **Blur**	entry box, slider	Blurs the background (canvas) image. If the image is a low resolution, it may not blur evenly.	0.000 to 1.000; defaults to 0.000.
Environment > *Texture Animation* | **Animation**	dropdown	Sets the background (canvas) image animation to either be **Static**, where it does not move, or **Rotate**, where it rotates around the object on the canvas at the speed set in the **Speed** field. If the control is changed from **Rotate** to **Static**, the background (canvas) image is reset back to its default position.	
Environment > *Texture Animation* | **Speed**	entry box, slider	Sets the rotation speed of the background (canvas) image. If the **Animation** field is set to **Static**, this control has no affect.	0.000 to 1.000; defaults to 0.050.
Light > *Color* | **Specular**	swatch	Sets the specular color of the light (the “shiny” color of the light).	Defaults to white.
Light > *Color* | **Diffuse**	swatch	Sets the diffuse color of the light (the “surface” color of the light).	Defaults to white.
Light > *Color* | **Intensity**	entry box, slider	Sets the intensity (brightness) of the selected light.	0.010 to 100; defaults to 1.000.

Control	Type	What it does	Notes
Light > *General* | **Fixed To**	dropdown	Sets what the light is fixed to: • **Scene** (default) - the light is fixed to the model, for example if a light is set at the model's back, it always points at the model's back, no matter how you move the view. • **Camera** - the light is fixed to a camera view, for example you can have a light always shining from above the camera, allowing you to move the model around and cast light on different areas.	
Light > *General* | **On**	checkbox	Whether the light is on or off.	
Light > *Position* | **Position**	control sphere	Lets you move the light around your project. Click and drag to move the light.	
Light > *Rendering* | **Render Shadows**	checkbox	Renders and displays the shadows cast on the model by the selected light in its current position.	

27 Projectors Palette

The **Projectors** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Projectors** palette displays the projectors in your project, and allows you to:

- Create, load, save, and delete projectors.
- Use a projector to take a snapshot of the current view.
- Use a projector to project an edited snapshot back onto the model's surface.

Projectors palette fields

Control	Type	What it does	Opens this dialog box	Notes
	button	Creates a new projector.		
	button	Saves the selected projector to disk.	**Save Projector**	
	button	Loads a saved projector from disk.	**Load Projector**	
	button	Deletes the selected projector.		
<projector name> > *General* | **Name**	entry box	Enter the name of the projector.		This identifies the projector at the top of the palette.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Action* | **Frame Offset**	entry box, slider	Set by how many frames to offset the loading of an animated object. You can specify a frame range, or simply a number of frames.		
<projector name> > *Action* | **Import**	button	Click to load the image from the file set in the Input File Path and project it as paint onto the model (without baking).	Pick Path (if **Input File Path** has not been specified)	
<projector name> > *Action* | **Project**	button	Click to load the image from the file set in the **Input File Path** and project and bake it onto the model.	Pick Path (if **Input File Path** has not been specified)	
<projector name> > *Action* | **Input File Path**	entry box	Enter the filename and path where the projector loads updated images from.		
<projector name> > *Action* | **Unproject**	button	Click to save the current view buffer out to the file set in the **Output File Path**.	Pick Path (if **Output File Path** has not been specified)	
<projector name> > *Action* | **Output File Path**	entry box	Enter the filename and path where the projector saves images to disk.		
<projector name> > *Unprojection* | **Clamp**	checkbox	If this is checked, Mari restricts the range of the paint buffer to values between 0 and 1.		

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Unprojection* | **Shader Used**	dropdown	Select the shader you want the projector to take a screen snapshot of. By default, this is set to **Current Paint Target**.		**Current Shader**, **Current Channel**, **Current Layer**, **Current Paint Target**, and **Current Layer and Below**.
<projector name> > *Unprojection* | **Lighting Mode**	dropdown	The lighting mode to use when taking a screen snapshot with this projector.		Flat, Basic, Full.
<projector name> > *Unprojection* | **Color Depth**	dropdown	The color depth of the screen snapshots taken by this projector.		8bit (Byte), 16bit (Half), 32bit (Float).
<projector name> > *Unprojection* | **Size**	dropdown	The size (in pixels) of the screen snapshots taken by this projector.		
<projector name> > *Painting* | **Painting Mode**	dropdown	Sets the paint blending mode.		The paint blending modes available are similar to many other paint packages. If you aren't familiar with the various modes, see *Paint Blending Modes* in the *Mari User Guide* for descriptions and examples.
<projector name> > *Projection* | **Projection**	dropdown	Sets whether Mari projects only onto the **Front** of the model (as you're seeing it) or whether paint goes straight **Through** the model (appearing on the back as well as the front).		

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Transformation*	**Scale**	entry boxes	Sets the scale of the projector.		
<projector name> > *Transformation*	**Translation**	entry boxes	Sets the translated position of the projector.		
<projector name> > *Transformation*	**Rotation**	entry box	Sets the rotation, in degrees, of the projector.		
<projector name> > *Update*	**Update Global Settings From Projector**	button	If you have adjusted any projection properties, click this button to see the effect of your changes in the canvas. When you do, the equivalent global projection properties in the **Projection** palette are also updated.		Updates all global projection properties.
<projector name> > *Update*	**Update Only Masks From Projector**	button	If you have adjusted any projection mask properties, click this button to see the effect of your changes in the canvas. When you do, the equivalent global projection mask properties in the **Projection** palette are also updated.		Updates global projection mask properties only.
<projector name> > *<projector name>* > *General*	**Name**	information	Name of the camera used for the projector.		
<projector name> > *<projector name>* > *General*	**Animated**	information	Whether the camera used for the projector is animated.		True, False.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *<projector name>* > *Perspective* | **FoV**	entry box, slider	Enter the value for the field of vision. This controls how much Mari distorts the view when applying perspective. At 0, the perspective camera gives exactly the same view as the ortho camera. As the value increases, the distortion increases.		
<projector name> > *<projector name>* > *Perspective* | **Near plane**	entry box, slider	Enter the value for the near clipping plane. Mari doesn't display parts of the scene that are closer than the Near plane.		
<projector name> > *<projector name>* > *Perspective* | **Far plane**	entry box, slider	Enter the value for the far clipping plane. Mari doesn't display parts of the scene that are further than the Far plane.		
<projector name> > *Edge Mask* > *General* | **Enabled**	checkbox	Whether the edge mask is turned on or not.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > Edge Mask > General | **Falloff Start**	entry box, slider	Controls where the edge mask starts on the model. The higher the value, the more forward facing the masking starts. If this is higher than the **FalloffEnd**, areas facing the view are paintable, and areas oblique to the view are masked. If this is lower, facing areas are masked and oblique areas are paintable.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Edge Mask > General | **Falloff End**	entry box, slider	Controls where the edge mask ends on the model. The higher the value, the closer, more forward facing the mask finishes.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Edge Mask > General | **Falloff Curve**	curve editor	Adjusts the falloff, using a curve editor to modify the falloff start and end point. To fine tun control over the falloff, add more points to the curve.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Channel Mask* > *General* | **Invert**	checkbox	If this is selected, the mask data is black on white rather than white on black.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Channel Mask* > *General* | **Mask Curve**	curve editor	Adjusts the amount of masking on the channel, where white pixels are totally masked, black pixels are totally unmasked, and 50% gray is 50% masked.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Channel Mask* > *General* | **Mask Contrast**	entry box, slider	The contrast applied to the original channel to derive the mask. At 1.0, the mask comes directly from the original channel. Lower values make the mask fuzzier than the input channel, higher values make it sharper than the input channel.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Channel Mask* > *General* | **Mask Amount**	entry box, slider	The strength of the mask effect.1.0 means that the mask absolutely controls where you can paint; the effects of the mask decrease as the value gets lower.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Channel Mask* > *General* | **Mask Channel**	dropdown	Sets the channel holding the mask from a list of available channels in your project.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Channel Mask* > *General* | **Enabled**	checkbox	Whether the channel mask is turned on or not.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > Ambient Occlusion Mask > General | **Invert**	checkbox	If this is selected, the mask data is black on white rather than white on black.		
<projector name> > Ambient Occlusion Mask > General | **Mask Curve**	curve editor	Controls how the ambient occlusion pixel values relate to the degree of masking. The horizontal axis is the darkness of the occluded pixels (black to the left, white to the right), the vertical axis is the degree of visibility. By default, this is a direct line, where white pixels are totally masked, black pixels are totally unmasked, and 50% gray is 50% masked.		
<projector name> > Ambient Occlusion Mask > General | **Mask Contrast**	entry box, slider	The contrast applied to the ambient occlusion to derive the mask. At 1.0, the mask comes directly from the calculated ambient occlusion. Lower values make the mask fuzzier than the ambient occlusion, higher values make it sharper.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > Ambient Occlusion Mask > General | **Mask Amount**	entry box, slider	The amount of ambient occlusion masking to apply.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Ambient Occlusion Mask > General | **Enabled**	checkbox	Whether the ambient occlusion mask is turned on or not.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Depth Mask > General | **Enabled**	checkbox	Whether the depth mask is turned on or not.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > Depth Mask > General | **Falloff**	entry box, slider	How fast the depth masking applies. Lower values make the mask apply slowly, higher values make it apply more quickly.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Depth Mask > General | **End**	entry box, slider	The depth in the scene for the depth masking to finish.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > Depth Mask > General | **Start**	entry box, slider	The depth in the scene for the depth masking to start.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Backface Mask* > *General* | **Enabled**	checkbox	Whether the backface mask is turned on or not.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Fractal Noise Mask* > *General* | **Invert**	checkbox	If this is selected, the mask data is black on white rather than white on black.		
<projector name> > *Fractal Noise Mask* > *General* | **Mask Curve**	curve editor	Adjusts the fractal noise masking where white pixels are totally masked, black pixels are totally unmasked, and 50% gray is 50% masked.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Fractal Noise Mask* > *General* | **Enabled**	checkbox	Whether the fractal noise mask is turned on or not.		When enabled, a  icon displays in the status bar.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Fractal Noise Mask* > *General* | **Mask Amount**	entry box, slider	The amount that the mask affects the paint buffer. 1.0 means that the mask absolutely controls where you can paint; the effects of the mask decrease as the value gets lower.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Fractal Noise Mask* > *General* | **Size**	entry box, slider	Determines the size of the fractal noise features.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Fractal Noise Mask* > *General* | **Roughness**	entry box, slider	Determines the roughness of the fractal noise features.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

Control	Type	What it does	Opens this dialog box	Notes
<projector name> > *Fractal Noise Mask* > *General* | **Contrast**	entry box, slider	Controls the level of contrast applied to the fractal noise features to derive the mask.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.
<projector name> > *Fractal Noise Mask* > *General* | **Seed**	entry box, slider	Changes the pattern of the fractal noise by moving the pattern start point through 3D space.		You need to click either of the update buttons under **Update** to see the effect of your changes in the canvas. When you do, the equivalent global properties in the **Projection** palette are also updated.

28 Selection Groups Palette

The **Selection Groups** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Selection Groups** palette lets you switch between saved selection groups. You can also create new selection groups, lock and unlock groups, and show or hide groups.

Selection Groups palette fields

Control	Type	What it does	Opens this dialog box	Notes
Sorted by	dropdown	Sets how to sort the entries in the list. At present, you can only sort by name.		
	button	Adds a new selection group, based on the current selection.		
	button	Removes the highlighted selection group.		
	button	Reloads the highlighted selection group.		
	button	Locks the selection group.		
	button	Unlocks the selection group.		
	button	Hides the selection group.		
	button	Shows the selection group.		

29 Color Manager Palette

The **Color Manager** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Color Manager** lets you manage how colors are displayed on your monitor. It includes many options for color correction, including a host of preset filters. Managing colors using the preset filters in this palette does not affect the paint on your model. For information on the filters used to apply transformations to the paint on your model, refer to the Filter Functions chapter.

Color Manager Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Options | **Enable Color Management**	switch, on/off indicator	Turns color correction on or off.		When on,  displays in the status bar, and a histogram displays a count of frequencies of colors in RGBA channels in the current view.
Options | **Active**	on/off indicator	Displays green when color correction is on.		Not active for scalar channel.

Control	Type	What it does	Opens this dialog box	Notes
Options | **Histogram**	switch, on/off indicator	Turns histogram view on or off. If it's on, Mari displays a color histogram in the background of the canvas.		
Options | **Split Point**	entry box, slider	Lets you split the display between showing corrected and uncorrected color. Enter a value or slide to specify what percentage of the model (split vertically) displays with color correction.		**Color Correction** is on. Range: 0.00 to 1.00
Current Color Profile | **<profile>**	dropdown	Lets you select from saved color profiles.		Default tries to make onscreen colors emulate film.
Current Color Profile | **New**	button	Prompts you to name a new profile, select available filters to include in a particular order, and save.	Edit	
Current Color Profile | **Edit**	button	Lets you rename and change the current profile, including adding filter to or deleting filters from the profile.	Edit	The default filters **Gain**, **LUT**, and **Display** cannot be deleted from the profile

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile | **Delete**	button	Deletes the current profile (after confirming).	Really Delete?	
Current Color Profile | **LUT**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.		
Current Color Profile > *LUT* > *General* | **LUT File**	entry box	Enter the filename and path of the LUT.		
Current Color Profile > *LUT* > *General* | **Extrapolate**	checkbox	Sets whether the GPU extrapolates the grid values or clamps to the maximum value of the LUT.		
Current Color Profile | **Composite Filter**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.	Add User Attribute	
Current Color Profile | **Levels**	switch, on/off indicator, add attribute	Changes the color levels in the paint, by setting the white point, midtone, and black point.		
Current Color Profile > *Levels* > *Channel* | **Color Component**	dropdown	Whether the filter affects all components, or a specific one (**Red**, **Green**, or **Blue**).		

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Levels* > *Input Levels* | **White Point**	entry box, slider	Specifies the upper limit of displayed color intensity. Areas with a value higher than this are mapped to 1 (pure white).		
Current Color Profile > *Levels* > *Input Levels* | **Midtone**	entry box, slider	Sets the middle point between white and black. Mari remaps the values so that this is the middle of the range between the white point and black point. Moving this pushes the values towards that end of the spectrum.		
Current Color Profile > *Levels* > *Input Levels* | **Black Point**	entry box, slider	Specifies the lower limit of displayed color intensity. Areas with a value lower than this are mapped to 0 (pure black).		
Current Color Profile > *Levels* > *Output Levels* | **White Output Levels**	entry box, slider	Sets how much white is output in the filtered image. Higher values show the entire white output, lower values show decreasing amounts.		

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Levels* > *Output Levels* | **Black Output Levels**	entry box, slider	Sets how much black is output in the filtered image. Higher values show the entire black output, lower values show decreasing amounts.		
Current Color Profile| **sRGB To Linear**	switch, on/off indicator, add attribute	Applies an sRGB to linear colorspace conversion.		
Current Color Profile > *sRGB To Linear* > *General* | **Invert**	checkbox	Applies a linear to sRGB colorspace conversion.		
Current Color Profile| **Color Curves**	switch, on/off indicator, add attribute	Changes the color curve for each color channel (RGB) in the painting.	Add User Attribute	Presets can be loaded from .mgf (Mari Gradient Files).
Current Color Profile > *Color Curves* > *Channels* | **Red**	curve editor	Controls how the filter translates current Red values to new values.		
Current Color Profile > *Color Curves* > *Channels* | **Green**	curve editor	Controls how the filter translates current Green values to new values.		
Current Color Profile > *Color Curves* > *Channels* | **Blue**	curve editor	Controls how the filter translates current Blue values to new values.		

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile | **Color Switches**	switch, on/off indicator, add attribute	Turns individual color channels on or off. (When Mari applies the filter, it removes any unchecked color channels from the painting.)	Add User Attribute	
Current Color Profile > *Color Switches* > *Channels* | **Blue**	checkbox	Click to turn the Blue channel display on or off.		
Current Color Profile > *Color Switches* > *Channels* | **Green**	checkbox	Click to turn the Green channel display on or off.		
Current Color Profile > *Color Switches* > *Channels* | **Red**	checkbox	Click to turn the Red channel display on or off.		
Current Color Profile | **Brightness**	switch, on/off indicator, add attribute	Changes the brightness of the paint on the model, either overall or for specific channels.	Add User Attribute	
Current Color Profile > *Brightness* > *General* | **Brightness**	entry box, slider, reset	Sets the brightness value for all channels (overwrites changes to individual channels).		Range: 0.00 to 2.00 Reset: 1.00
Current Color Profile > *Brightness* > *Channels* | **Blue**	entry box, slider, reset	Sets the brightness value for the blue channel.		Range: 0.00 to 2.00 Reset: 1.00
Current Color Profile > *Brightness* > *Channels* | **Green**	entry box, slider, reset	Sets the brightness value for the green channel.		Range: 0.00 to 2.00 Reset: 1.00

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Brightness* > *Channels* | **Red**	entry box, slider, reset	Sets the brightness value for the red channel.		Range: 0.00 to 2.00 Reset: 1.00
Current Color Profile| **Blur**	switch, on/off indicator, add attribute	Applies a standard blur to the selection.	Add User Attribute	
Current Color Profile > *Blur* > *General*| **Blur Radius**	entry box, slider, reset	Sets the blur radius - the number of pixels Mari uses when calculating the blur value for each pixel. The higher the radius, the more blurred the results.		Range: 0 to 10 Reset: 4 If you use a larger blur radius, you may get slight lines on the boundaries between patches. This is an artifact of the way that Mari handles the edges of patches.
Current Color Profile | **Tone Mapping**	switch, on/off indicator, add attribute	Varies the "exposure" of the painting.	Add User Attribute	
Current Color Profile > *Tone Mapping* > *General* | **White Point**	entry box, slider, reset	Sets the upper limit of displayed color intensity - any colors of greater intensity map to white.		Range: 0.00 to 1.00 Reset: 1.00
Current Color Profile > *Tone Mapping* > *General* | **Exposure**	entry box, slider, reset	Sets the exposure - lower exposures give darker images; higher exposures give lighter ones.		Range: 0.00 to 10.00 Reset: 1.00

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile | **Gamma**	switch, on/off indicator, add attribute	Changes the gamma levels in the selection.	Add User Attribute	A higher setting for **Gamma** results in a more washed-out looking image.
Current Color Profile > *Gamma* > *General* | **Do Inverse**	checkbox	Reverses the gamma conversion.		
Current Color Profile > *Gamma* > *General* | **Use default gamma**	checkbox	Disables the other controls and uses your default setting for gamma (as set in the **Painting** tab of the Mari Preferences Dialog).		
Current Color Profile > *Gamma* > *General* | **Gamma**	entry box, slider, reset	Sets the gamma level.		Range: 0.00 to 3.00 Reset: 2.20
Current Color Profile | **Lin 2 Log**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.	Add User Attribute	
Current Color Profile | **Hue**	switch, on/off indicator, add attribute	Changes the hue, saturation, and value of the colors on the model.	Add User Attribute	
Current Color Profile > *Hue* > *Hue* | **Rotate**	entry box, slider, reset	Moves the colors around the color wheel. The rotation value is the degree around the color wheel that each color shifts, between 0 and 360 (which both correspond to the original colors).		Range: 0.00 to 360.00 Reset: 0.00

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Hue* > *Saturation* | **Scale**	entry box, slider, reset	Sets a multiplier for the saturation.		Range: 0.00 to 2.00 Reset: 1.00 (the original saturation)
Current Color Profile > *Hue* > *Saturation* | **Offset**	entry box, slider, reset	Adds an offset value to the initial saturation, before applying the **Scale**.		Range: 0.00 to 1.00 Reset: 0.00
Current Color Profile > *Hue* > *Saturation* | **Saturation**	curve editor	Controls how the filter translates current saturation to new saturation.		
Current Color Profile > *Hue* > *Value* | **Scale**	entry box, slider, reset	Sets a multiplier for the value.		Range: 0.00 to 2.00 Reset: 1.00 (the original value)
Current Color Profile > *Hue* > *Value* | **Offset**	entry box, slider, icon	Adds an offset value to the initial value, before applying the **Scale**.		Range: 0.00 to 1.00 Reset: 0.00
Current Color Profile > *Hue* > *Value* | **Value**	curve editor	Controls how the filter translates current values to new values.		
Current Color Profile | **Invert**	switch, on/off indicator, add attribute	Inverts the colors in the selection. Replaces colors with their "opposite" in the color chart. For example, replaces a color with a float value of 0.3 with a color with float value 0.7.	Add User Attribute	

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Invert* > *General* | **Invert Alpha**	checkbox	Inverts the alpha channel.		
Current Color Profile | **Premultiply Alpha**	switch, on/off indicator, add attribute	Either pre- or post-multiplies the alpha in the selected image. If you are painting using an image without pre-multiplied alpha onto one with it, use this filter to perform the pre-multiplication, so the images match and you avoid lines around the outside of the patch.	Add User Attribute	
Current Color Profile > *Premultiply Alpha* > *General* | **Postmultiply**	checkbox	Works the same as pre-multiply, but in reverse (removes pre-multiplication to match images that do not have pre-multiplied alpha).		
Current Color Profile | **Log 2 Lin**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.	Add User Attribute	

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile | **Luminosity**	switch, on/off indicator, add attribute	Outputs just the luminosity value of each pixel in the selection. That is, it outputs a grayscale image based on the brightness of each of the pixels in the original image.	Add User Attribute	
Current Color Profile | **Contrast**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.	Add User Attribute	
Current Color Profile | **Clamp**	switch, on/off indicator, add attribute	Clamps color values to lie within the specified upper and lower values.		Set the **Upper Value** and **Lower Value** by adjusting the sliders or entering values in the entry boxes. Select the individual **Color Component** to clamp in the dropdown menu.
Current Color Profile > *Clamp* > *General* | **Upper Value**	entry box, slider	Set the upper value at which color values are clamped. All values higher than this number are set to this value.		
Current Color Profile > *Clamp* > *General* | **Lower Value**	entry box, slider	Set the lower value at which color values are clamped. All values lower than this number are set to this value.		

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Clamp* > *Channel* | **Color Component**	dropdown	Select the individual color component to clamp.		
Current Color Profile > *Contrast* > *General* | **Amount**	entry box, slider, reset	Changes the contrast of the paint.		Range: 0.00 to 2.00 Reset: 1.00
Current Color Profile | **Copy Channel**	switch, on/off indicator, add attribute	Copies the value from one RGB color channel to the other two. The result is a grayscale image with the intensity values from the selected channel.	Add User Attribute	
Current Color Profile > *Copy Channel* > *General* | **Copy Channel**	dropdown	Select the source channel from the list (**Red**, **Green**, or **Blue**). When you apply the filter, Mari copies the selected channel over the other two channels.		
Current Color Profile | **Soften**	switch, on/off indicator, add attribute	Applies a subtle softening blur.	Add User Attribute	This is a quick, predefined blur filter. If you need more control over the degree or type of blurring, use either the standard **Blur** or **GaussianBlur** filters.

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile | **Edge Detect**	switch, on/off indicator, add attribute	Finds “edges” (transitions between colors) in the image and heightens them.	Add User Attribute	
Current Color Profile | **Emboss**	switch, on/off indicator, add attribute	Applies an “emboss” effect, so that textures look “raised” on the surface.	Add User Attribute	
Current Color Profile | **Sharpen**	switch, on/off indicator, add attribute	Removes 'fuzziness' and clarifies detail in the image.	Add User Attribute	
Current Color Profile > *Sharpen* > *General* | **Amount**	entry box, slider, reset	Sets the amount of sharpening. Higher values mean more sharpening, while a value of 0.00 is the picture without the filter applied.		Range: 0.00 to 1.00
Current Color Profile | **Dilate**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.	Add User Attribute	
Current Color Profile | **Gaussian**	switch, on/off indicator, add attribute	Applies a Gaussian blur. Compared to the standard **Blur** filter, this gives you much finer control over the degree of blurring, and the option of using much higher blur values.	Add User Attribute	

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Gaussian* > *General* | **Radius**	entry box, slider	Sets the blur radius. The higher the radius, the more blurred the results.		Range: 0.00 to 50.00 If you use a larger blur radius, you may get slight lines on the boundaries between patches. This is an artifact of the way that Mari handles the edges of patches.
Current Color Profile | **High Pass**	switch, on/off indicator, add attribute	Removes low frequency information from the image while maintaining higher frequency detail.		
Current Color Profile > *High Pass* > *General* | **Amount**	entry box, slider	Sets how much low frequency information is removed by the filter.		
Current Color Profile > *High Pass* > *General* | **Radius**	entry box, slider	Controls the number of pixels around the image highlights that are affected by the filter.		
Current Color Profile | **Color Correction**	switch, on/off indicator, add attribute	Switches the filter on or off, or lets you add attributes to it.		
Current Color Profile > *Color Correction* > *User Attributes* | **Configuration File**	entry box	Specifies the configuration file to use.		

Control	Type	What it does	Opens this dialog box	Notes
Current Color Profile > *Color Correction* > *User Attributes*	**Input ColorSpace**	dropdown	The colorspace of the current painting.		
Current Color Profile > *Color Correction* > *User Attributes*	**Output ColorSpace**	dropdown	The colorspace correction to apply to the current painting.		
Current Color Profile	**Add Noise**	switch, on/off indicator, add attribute	Applies noise to the current painting.		
Current Color Profile > *Add Noise* > *User Attributes*	**Amount**	entry box, slider	Adjusts how much noise is applied.		
Current Color Profile > *Add Noise* > *User Attributes*	**Color Component**	dropdown	Sets the channel you want to affect.		
Current Color Profile > *Add Noise* > *User Attributes*	**Grayscale**	checkbox	Applies grayscale noise with only the intensity values from the selected channel.		
Current Color Profile > *Add Noise* > *User Attributes*	**Seed**	entry box, slider	Adds variation to the noise.		
Current Color Profile > *Add Noise* > *User Attributes*	**Size**	entry box, slider	Adjusts the size of the noise applied.		

30 Image Manager Palette

The **Image Manager** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Image Manager** lets you store and work with images in your project, including using them for brushes and painting through them onto your model.

Image Manager Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Image Info | **MriImage**	add attribute			
Image Info > *MriImage* > *Info* | **Depth**	information	The color depth of the currently selected image in bytes.		
Image Info > *MriImage* > *Info* | **Channels**	information	The color components of the currently selected image.		
Image Info > *MriImage* > *Info* | **File Space**	dropdown	File space of the currently selected image.		NORMAL or VECTOR
Image Info > *MriImage* > *Info* | **ColorSpace**	dropdown	Colorspace of the currently selected image.		COLOR or SCALAR
Image Info > *MriImage* > *Info* | **Tiled Image**	information	Whether the image is tiled - true or false.		

Control	Type	What it does	Opens this dialog box	Notes
Image Info > *MrlImage* > *Info*	**Height**	information	The height of the currently selected image in pixels.		
Image Info > *MrlImage* > *Info*	**Width**	information	The width of the currently selected image in pixels.		
Image Info > *MrlImage* > *Info*	**Path**	information	The file path to the original image.		
		button	Adds an image to the Image Manager.	Open an Image	
		button	Removes the selected image from the Image Manager.		
		button	Opens the selected image in another window, where you can crop it.	<image>	
		button	Saves the selected image to a file.	Save an image	

Control	Type	What it does	Opens this dialog box	Notes
(<image> window) | 	button	Crops the current image. Mari copies the cropped area as a separate image in the **ImageManager**. The cropped image is part of the project, but won't be saved as a separate image file unless you use the **SaveAs** option (see above). Select one of the following crop modes: • **Arbitrary** - Click and drag on an arbitrary area of the image. • **Fixed** - Enter a fixed size for the crop box (in pixels) and drag it to the area you want to crop. • **Aspect** - Enter a fixed aspect ratio for the crop box (in pixels) and drag it over the area you want to crop. Once you have selected the crop area, click the mouse button to crop.		

31 History View Palette

The **History View** palette is described below.

What It Does

The **History View** palette displays a list of actions performed in the current session. Click an action to step back to that version of the project.

32 Brush Editor Palette

The **Brush Editor** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Brush Editor** palette shows the settings for the current brush tip. It includes the following tabs:

- **Properties** - properties of the selected brush.
- **Shelves** - customized shelves of brushes.
- **Presets** - pre-set shelves of brushes.
- (**Shelves** and **Presets** tabs are the same as the Shelf Palette).

Brush Editor Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Properties > *General* | **Noise**	entry box, slider, reset	The amount of noise to add to the brush tip for each splat. This is a little bit of noise added to the splat itself, to soften the appearance and reduce banding. Lower values give a harder brush, higher values a softer brush.		

Control	Type	What it does	Opens this dialog box	Notes
Properties > *General* | **Spacing**	entry box, slider, reset	The space between splats, as a proportion of the width of a splat. 1.00 = side-by-side (so if the tip is a circle, it would look like a string of beads.) .02 = .02 x the width of a splat.		Range: 0.02 to 5.00 Reset: 0.02
Properties > *Paint* | **JitterOpacityMax**	entry box, slider, reset	How much to randomly vary the opacity (if **Jitter Opacity** is enabled).		1.00 = side by side Range: 0.00 to 1.00 Reset: 0.00
Properties > *Paint* | **JitterOpacity**	checkbox	If enabled, picks random number to add to opacity.		
Properties > *Paint* | **Opacity**	entry box, slider, reset	How dark a stroke can be (maximum alpha).		Range: 0.01 to 1.00 Reset: 1.00
Properties > *Paint* | **Flow**	entry box, slider, reset	Mimics how quickly paint is applied, by setting the maximum opacity in a splat.		Range: 0.01 to 1.00 Reset: 1.00
Properties > *Position* | **JitterPositionMax**	entry box, slider, reset	How many pixels at most to randomly vary displacement from the line of the brush stroke (if **Jitter Position** is enabled).		Range: 0 to 1000 Reset: 1000

Control	Type	What it does	Opens this dialog box	Notes
Properties > *Position*	**JitterPosition**	checkbox	Whether to randomly vary displacement from the line of the brush stroke (to the degree specified in **Jitter Position Max**).		
Properties > *Pressure*	**Colors**	checkbox	Whether more pressure causes the color to vary (from slightly darker to the target color).		
Properties > *Pressure*	**Radius**	checkbox	Whether more pressure increases the radius.		
Properties > *Pressure*	**Flow**	checkbox	Whether more pressure increases the flow.		
Properties > *Pressure*	**Alpha**	checkbox	Whether more pressure increases the opacity.		
Properties > *Radius*	**Squish**	entry box, slider, reset	How much to flatten the radius. If the brush tip is a circle, 1.0 is a circle, .5 is an oval half as tall as it is wide.		Range: 0.05 to 1.00 Reset: 1.00
Properties > *Radius*	**JitterRadius**	entry box, slider, reset	Whether to randomly vary the radius (to the degree specified for the **Radius** and **InnerRadius**).		

Control	Type	What it does	Opens this dialog box	Notes
Properties > *Radius*	**InnerRadius**	entry box, slider, reset	How few pixels the radius of a splat can be (if **JitterRadius** and/or **RadiusPressure** are enabled).	Range: 1 to 1200 Reset: 1
Properties > *Radius*	**Radius**	entry box, slider, reset	How many pixels at most the radius of splat can be (if **JitterRadius** and/or **RadiusPressure** are enabled).	Range: 1 to 1200 Reset: 100
Properties > *Rotation*	**AligntoStroke**	checkbox	Whether the brush tip rotates along with the direction you're painting. (With calligraphy, for example, the tip does not align.)	
Properties > *Rotation*	**JitterRotationMax**	entry box, slider, reset	How many degrees at most to randomly vary the rotation (if **JitterRotation** is enabled).	Range: 1 to 360 Reset: 360
Properties > *Rotation*	**JitterRotation**	checkbox	Whether to randomly vary the rotation.	
Properties > *Rotation*	**Rotation**	entry box, slider, reset	The degree to which the brush rotates to match the direction you're painting (if **AligntoStroke** is enabled).	Range: 0.00 to 360.00 Reset: 0.00

Control	Type	What it does	Opens this dialog box	Notes
Properties > *General* | **Type**	dropdown	Whether to use a **Bitmap** image for the brush tip, or **Render** based on the qualities specified in these properties		
Properties > *General* | **Preview**	image	An image of the brush tip, based on the selected properties.		
Properties > *Bitmap* | **UsePainting**	button	Click to use the painting in the paint buffer as a brush tip. Mari prompts you to save it either as an **.exr** or a **.tif** file (which file format is used depends on the support in your graphics card). Note that **.exr** files are 16-bit - most other bitmaps are 8-bit.		
Properties > *Bitmap* | **Path**	entry box, button	Type the path or click  to select an existing bitmap to use as the brush tip.		To use an image as the brush tip, you need to set **Type** to **Bitmap**.
Properties > *Geometry* | **VerticalShear**	entry box, slider, reset	How much to distort the brush tip diagonally, top to bottom (as if pulling opposite corners up and down).		Range: -1.00 to 1.00 Reset: 0.00

Control	Type	What it does	Opens this dialog box	Notes
Properties > *Geometry*	**HorizontalShear**	entry box, slider, reset	How much to distort the brush tip diagonally, right to left (as if pulling opposite corners right and left).		Range: -1.00 to 1.00 Reset: 0.00
Properties > *Geometry*	**VerticalScale**	entry box, slider, reset	How much to distort the brush tip vertically.		Range: 0.00 to 2.00 Reset: 50
Properties > *Geometry*	**HorizontalScale**	entry box, slider, reset	How much to distort the brush tip horizontally.		Range: 0.00 to 2.00 Reset: 50
Properties > *Noise*	**Octaves**	entry box, slider, reset	Number of applications of noise.		Range: 1 to 8 Reset: 4
Properties > *Noise*	**Frequency**	entry box, slider, reset	How many spikes per octave.		Range: 0.00 to 100.00 Reset: 1.00
Properties > *Noise*	**Scale**	entry box, slider, reset	How big the spikes are, as a proportion of the radius (1.00 = twice as big as the radius).		Range: 0.00 to 1.00 Reset: 0.00
Properties > *Noise*	**Segments**	entry box, slider, reset	Lines making up the brush outline, to which noise is applied (4=square, 360=circle).		Range: 4 to 360 Reset: 360
Properties > *Profile*	**Profile**	curve editor	How opaque or transparent the brush is at different points.		
Properties > *Profile*	**Bit Depth**	dropdown	The color depth of the brush tip.		

Control	Type	What it does	Opens this dialog box	Notes
Shelves	tabs	Select shelves, click to display more to the left or right.		
Presets	tabs	Select shelves, click to display more to the left or right.		
Scratch pad		Provides a space to test the brush.		

33 Play Controls Palette

The **Play Controls** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

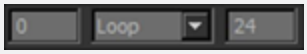
What It Does

The **Play Controls** palette allows you to play animations. You can set keyframes, which allows you to paint different textures in different parts of the animation sequence.

What It Looks Like

Play Controls Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Timeline	timeline	Shows where in the animation sequence you are currently viewing. Keyframes appear as solid boxes in the timeline.		
	button	Adds a keyframe at the current frame.		

Control	Type	What it does	Opens this dialog box	Notes
	button	Removes the selected keyframe.		
Frame range	entry box	The start and end frames of the animation.		
	entry box, dropdown	Sets the start and end frames of the animation to play. Use this if you want to play only a section of the animation. Select the play mode from the dropdown. One of: • **Loop** - play the selected frames through, repeating again from the start when it finishes. • **Bounce** - play the selected frames through from start to finish, then backwards from the finish to start, and then repeating. • **Stop** - play the animation once and then stop.		
	button	Move back a single frame.		
	button	Move back to the beginning of the animation.		
	button	Play the animation.		
	button	Stop playing.		
	button	Move forward a single frame.		

34 Python Console Palette

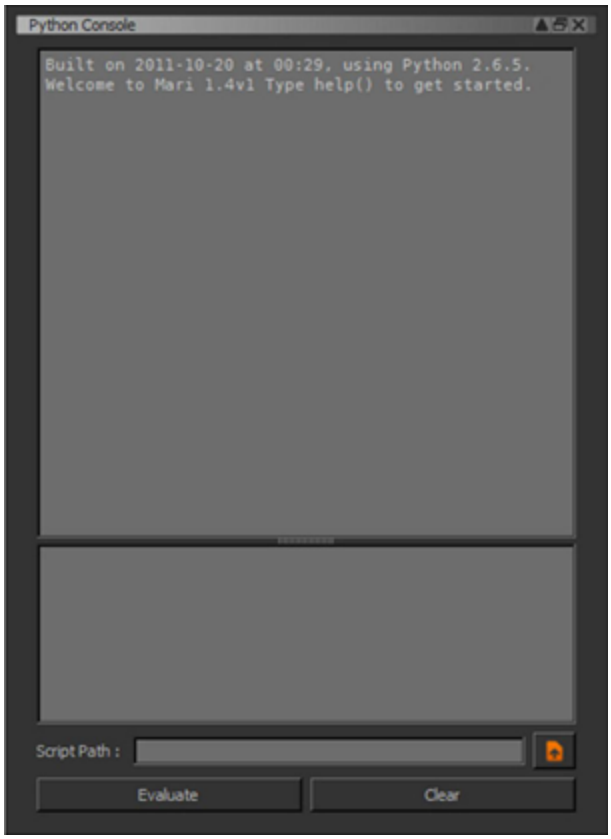
The **Python Console** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Python Console** palette is divided into three sections:

- a **Script Path** entry box that loads Python scripts from a defined location
- an input pane that is used to enter and execute Python statements in the lower half of the palette
- an output pane that displays statements and their outputs in the upper half of the palette.

What It Looks Like



Python Console Palette Fields

Control	Type	What it does	Notes
Output Pane	information	Displays Python statements and their outputs.	
Input Pane	entry box	Click inside to enter Python statements.	
Script Path	entry box	Enter the file path where the console loads scripts from.	
	button	Selects a Python file for evaluation in the console. Selecting a file fills in the **Script Path** but you need to click **Evaluate** to continue.	Opens the **Python Script Path** dialog.
Evaluate	button	Executes Python script or statement.	
Clear	button	Clears the input and output panes.	
Help	button	Opens the **Mari Python API Help** in a new window. This window is visible until you click **Help** again or close the window. If you have the help open while typing in the Input Pane with auto-complete on, commands that appear in auto-complete are automatically found in the help as well.	

35 Pixel Analyzer Palette

The **Pixel Analyzer** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Pixel Analyzer** displays information about pixels selected with the **Color Picker/Pixel Analyzer** tool.

Pixel Analyzer Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Colors | **Current**	swatch	Displays the color of the pixel selected with the **Color Picker/Pixel Analyzer** tool.		
Colors | **Minimum**	swatch	Displays the minimum color of the pixels that have been selected with the **Color Picker/Pixel Analyzer** tool (when **Accumulate** is enabled).		
Colors | **Average**	swatch	Displays the average color of the pixels that have been selected with the **Color Picker/Pixel Analyzer** tool (when **Accumulate** is enabled).		
Colors | **Maximum**	swatch	Displays the maximum color of the pixels that have been selected with the **Color Picker/Pixel Analyzer** tool (when **Accumulate** is enabled).		

Control	Type	What it does	Opens this dialog box	Notes
Accumulate | **Enabled**	checkbox	When selected, keeps data on all pixels selected (until **Reset**), and calculates **Minimum**, **Average** and **Maximum** colors.		
Accumulate | **Reset**	button	Clears all accumulated pixel selections, to just the Current selection.		
Values | **Range**	dropdown	**Byte**, **Float**, or **Half**.		
Values | **R, G, B, A**	information	Values for Red, Green, Blue, and Alpha.		
Values | **H, S, V, L**	information	Values for Hue, Saturation, Value, and Luminosity.		
Values | **X, Y E, I**	information	Values for position of pixel on x and y axis, and the pixel Exposure and Intensity.		

36 Colors Palette

The **Colors** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Colors** palette lets you view and change colors. The controls on this palette all work together - as you change the color through one control, the other controls update to show your change.

Colors Palette Fields

Control	Type	What it does	Notes
Foreground/Background | **Foreground**	swatch	Shows the current foreground color.	This is the color that Mari uses when you paint using the Paint tool. Clicking on this swatch opens the **Select Color** dialog box.
Foreground/Background | **Background**	swatch	Shows the current background color.	Clicking on this swatch opens the **Select Color** dialog box.
Foreground/Background | 	button	Swap foreground and background.	
Foreground/Background | 	button	Set colors to black (background) and white (foreground).	
	entry box, slider	Specify **Red** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Green** values.	Range: 0.000 to 1.000

Control	Type	What it does	Notes
	entry box, slider	Specify **Blue** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Alpha** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Hue** values.	Range: 0.000 to 0.999
	entry box, slider	Specify **Saturation** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Value** values.	Range: 0.000 to 1.000
HSV	tab: field, sliders, option buttons	Use this to pick colors from a Hue/Saturation/Value field.	To create custom color spectrums. Adjust the field values using the controls on the right, then click in the field to set the foreground color.
Values	tab: field	Use this to set **Byte (8 Bit)**, **Half (16 Bit)**, or **Float (32 Bit)** color values.	
Image	tab: field	Drag an image here from the Image Manager Palette to pick colors from an image.	Click the image to select a foreground color. You can also load an image by right-clicking and selecting **Load Image**, then selecting a file from the **Load** dialog box. To clear an image, right-click it and select **Clear Image**.
Grey	tab: sliders, buttons	Use this to pick a gray value from the gradient, or one of the presets.	

Control	Type	What it does	Notes
Swatches	tab: swatches, buttons	Use this to pick from the **Background** and **Foreground** swatches. Click the buttons to swap foreground and background, and switch to black and white.	(same as swatches and buttons next to tabs)
Sliders	tab: sliders	Use this to pick colors by specifying RGB, alpha, and HSV values.	(same as sliders next to tabs)
Blend	tab: swatches, field	Use this to show a field with four colors blending into each other.	Click on the box at each corner of the field to set the color for that corner. You can set each color individually, then click in the field to pick from the blend.
Intensity	entry box, slider	Adjusts the intensity of colors in the **Select Color** dialog to select HDR colors. HDR colors are considered to be any color with an intensity that is greater than 1.	From 0 to 4096; defaults to 4096. The maximum range of the **Intensity** slider can be adjusted in the Mari Preferences Dialog under Color > Color Management Defaults | **Color Picker Maximum**.

37 Tool Properties Palette

The **Tool Properties** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Tool Properties** palette displays information about the selected tool.

Tool Properties Palette Fields

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Select* > *MriSelect* > *General* | **Facing**	dropdown	Sets whether the selection only applies to the **Front** of the model as you can see it, or if the selection goes **Through** the model and includes the other side.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Marquee Select Tool* > *MriMarqueeSelectTool* > *General* | **Crawling Ants**	checkbox	Controls whether the selection edges are animated. If on, the edges are animated.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Type**	dropdown	The shape of the selection drawn: • **Lasso** - lets you draw a "free" selection of any shape. • **Rectangle** - lets you draw a rectangular selection. • **Polygonal** - lets you draw a polygonal selection of any shape by setting multiple points before closing the selection. • **Ellipse** - lets you draw an oval selection. • **MagicWand** - lets you select by color. When you click, Mari creates a selection around the point you clicked. The selection is based on color – areas with a similar color to the original point are selected. You can change the color threshold for the selection.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Marquee Select Tool* > *MriMarqueeSelectTool* > *General* | **Mode**	dropdown	How drawing a new selection affects the current marquee selection: • **Replace** - the new selection replaces the existing selection. • **Transform** - this lets you move you selection area around (move, rotate, or scale the selection). • **Add** - the new selection adds onto the existing selection. • **Subtract** - the new selection removes areas of the existing selection. • **Intersect** - inverts the existing selection. That is, any areas that were selected become unselected, and any areas that were unselected become selected.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Invert Marquee Selection**	button	Inverts the current selection. Unselected areas become selected, and vice versa.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Clear Marquee Selection**	button	Clears the current selection.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Enabled**	checkbox	Turns the marquee selection on and off.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Color Threshold**	entry box, slider	Sets the color threshold for the marquee selection. Setting a lower value here results in a more accurate color selection. Higher values catch more of the surrounding color.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *General* | **Amount**	entry box, slider, reset	Sets how much the marquee selection prevents painting outside the selected area. This works as a multiplier to the alpha of paint applied outside the selection: • At 1, only the area inside the selection is paintable. • At 0.5, paint outside the selection applies with an alpha of 0.5.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Marquee Select Tool* > *MriMarqueeSelectTool* > *Selection Edge* | **Feathering**	entry box, counter	Controls how sharp the edge of the selection area is. At 0, the selection has a completely sharp edge. As the value rises, the edges become softer.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *Transform* | **Reset Marquee Transform**	button	Resets any transformations (moves, rotations, scales) applied to the marquee selection area.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *Transform* | **Center**	entry box	Sets the center of the marquee selection.		Use the break link button to break the link between the two fields.
	Marquee Select Tool > *MriMarqueeSelectTool* > *Transform* | **Rotation**	entry box	Sets the rotation, in degrees, of the marquee selection.		
	Marquee Select Tool > *MriMarqueeSelectTool* > *Transform* | **Scale**	entry box	Sets the scale of the marquee selection.		1 is the original scale.
	Marquee Select Tool > *MriMarqueeSelectTool* > *Transform* | **Translation**	entry box	Sets the translated position onscreen of the marquee selection.		
	No properties.				
	No properties.				
	No properties.				

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Vector Inspector* | **MriVector InspectorTool**	add attribute	Click to add attributes.	Add User Attribute	
	Vector Inspector > *MriVectorInspectorTool* > *General* | **Line Spacing**	entry box, slider	Adjusts the spacing between the directional markers.		**Shift**+ drag the mouse when the vector inspector is active.
	Vector Inspector > *MriVectorInpsectorTool* > *General* | **Line Length**	entry box, slider	Adjust the length of the directional markers.		
	Vector Inspector > *MriVectorInspectorTool* > *General* | **Start color**	swatch	Change the color at the base of the directional markers.		
	Vector Inspector > MriVectorInspectorTool > General | **End color**	swatch	Change the color at the tip of the directional markers.		
	Vector Inspector > *MriVectorInspectorTool* > *General* | **Vector Space**	dropdown	Set whether the vector inspector operates in **ScreenSpace**, **TangentSpace**, or **WorldSpace**.		
	Vector Inspector > *MriVectorInspectorTool* > *General* | **Rotation**	entry box, slider	Adjusts the rotation of the directional markers. This can be changed using the slider, or by entering a specific value.		
	Vector Inspector > MriVectorInspectorTool > General | **Translation**	entry boxes	The exact location in XY space of the vector inspector. Entering values adjusts the position of the inspector too.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Blur > (Same as **Paint**.)	add attribute	Click to add attributes.	Add User Attribute	
	No properties.	add attribute	Click to add attributes	Add User Attribute	
	No properties.	add attribute	Click to add attributes.	Add User Attribute	
	No properties.	add attribute	Click to add attributes.	Add User Attribute	
	*Paint* | **Paint**	add attribute	Click to add attributes	Add User Attribute	
	Paint > *Paint* > *General* | **Description**	information			
	Paint > *Paint* > *General* | **Name**	information			
	Paint > *Paint* | **Tip**	add attribute	Brush tip details. This is a duplicate of the section from the Brush Editor Palette.	Add User Attribute	
	Paint > *Paint* | **Texture**		Brush texture details. This is a duplicate of the section from the Brush Editor Palette.		
	Paint > *Paint* | **Geometry**		Brush geometry details. This is a duplicate of the section from the Brush Editor Palette.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Vector Paint* | **Vector Paint**	add attribute	Click to add attributes.	Add User Attributes	
	Vector Paint > *Vector Paint* > *General* | **Description**	information			
	Vector Paint > *Vector Paint* > *General* | **Name**	information			
	Vector Paint > *Vector Paint* | **Tip**	add attribute	Brush tip details. This is a duplicate of the section from the Brush Editor Palette.	Add User Attribute	
	Vector Paint > *Vector Paint* | **Texture**	add attribute	Brush texture details. This is a duplicate of the section from the Brush Editor Palette.	Add User Attribute	
	Vector Paint > *Vector Paint* | **Geometry**	add attribute	Brush geometry details. This is a duplicate of the section from the Brush Editor Palette.	Add User Attribute	
	**Eraser** > (Same as **Paint**)	add attribute	Click to add attributes.	Add User Attributes	

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Paint Through > Same as **Paint** except: **Texture** does not include **Geometry**. And it includes the following:				

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Texture > *Image*	**Filename** 	entry box, button			
	Texture > *Info*	**Description**	information			
	Texture > *Info*	**Height**	information			
	Texture > *Info*	**Width**	information			
	Texture > *Preview*	**PreviewAlpha**	entry box, slider			Range: 0.10 to 1.00
	Texture > *Preview*	**Image**	image			
	Texture > *Transform*	**Image Scale**	two entry boxes	Enter values to scale the image on the x and y axes.		
	Texture > *Transform*	**ImageScale**	button	Locks the current **ImageScale** values so that any changes to scale are applied proportionately to both axes.		
	Texture > *Transform*	**Pan Lock**	checkbox	Locks the image position relative to the model. If you pan the model, the image that you're painting through pans too.		
	Texture > *Transform*	**Scale Lock**	checkbox	Locks the image size relative to the model. If you zoom the model in or out, the image that you're painting through zooms in or out too.		
	Texture > *Transform*	**Reset Size**	dropdown	ToOriginalSize, RelativeToPaintBuffer.		
	Texture > *Transform*	**Auto Reset**	dropdown	Reset, DoNotReset.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Texture* > *Gradient* > *Info* | **Width**	information			
	Texture > *Gradient* > *Preview* | **Preview Alpha**	swatch	The alpha value to use for the gradient "floating" over the main canvas		
	Texture > *Gradient* > *Preview* | **Image**	image	Preview version of the gradient		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Gradient > Same as **Paint** except: **Texture** does not include **Geometry**. And it includes:				

Tool	Control	Type	What it does	Opens this dialog box	Notes
	Texture > *Gradient* > *Gradient* | **Description**	information			
	Texture > *Gradient* > *Gradient* | **Name**	information			
	Texture > *Gradient* > *Gradient* | **Name**	dropdown	Selects between Linear or Radial gradient.		
	Texture > *Gradient* > *Gradient* | **Out Point**	entry box, slider	How far through the gradient the final color reaches.		0.00 to 1.00, higher values imply the end color is reached later.
	Texture > *Gradient* > *Gradient* | **In Point**	entry box, slider	How far through the gradient the start color lasts for (before it starts graduating into the end color).		0.00 to 1.00, higher values imply the start color finishes later.
	Texture > *Gradient* > *Gradient* | **End**	swatch	Final color for the gradient (color that the gradient ends up as).		
	Texture > *Gradient* > *Gradient* | **Start**	swatch	First color for the gradient (color the gradient starts out as).		
	Texture > *Gradient* > *Info* | **Height**	information			

Tool	Control	Type	What it does	Opens this dialog box	Notes
	**Clone Stamp** > Same as **Paint Through** except it includes:				
	Texture > *Debug* | **Relative**	checkbox			
	Texture > *Debug* |**DebugView**	checkbox			
	Texture > *Debug* | **Preview Alpha**	entry box, slider			Range: 0.10 to 1.00
	Texture > *Image* | **Clone From**	two entry boxes			
	Texture > *Preview* | **Onscreen Preview**	checkbox			
	*Towbrush* > *MriTowbrush* > *General* | **Falloff**	entry box, slider	Sets how sharply the texture blends in from the edges of the selected patch. Higher values have sharper transition to the surrounding texture, lower values blend more smoothly.		
	Towbrush > *MriTowbrush* > *General* | **Value**	entry box, slider	Controls how much of the color of the original patch to preserve. Higher values keep more of the original color, lower values blend the whole patch in with the background as you move it.		

Tool	Control	Type	What it does	Opens this dialog box	Notes
	*Eye Dropper* > *General*	**Sample Size**	entry box, slider	Radius in pixels that the eyedropper uses when sampling colors off the surface of the model.		Range: 1 to 15
	Eye Dropper > *Graph*	**Grid Size**	entry box, slider	The size of the grid overlay.		
	Eye Dropper > *Graph*	**Grid**	checkbox	Enable the grid overlay. To see the grid overlay you must select a **Type** other than **None**.		
	Eye Dropper > *Graph*	**Color**	swatch	The color of the grid overlay.		
	Eye Dropper > *Graph*	**Type**	dropdown	The orientation of the **Eye Dropper** guide. When **Both** is selected, both axes of the guide are displayed.		

38 Painting Palette

The **Painting** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Painting** palette displays information and controls for managing painting features.

Painting Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Painter > *Filtering* | **Image**	dropdown	The image filtering to use when copying textures using the clone tools (**CloneStamp** and **PaintThrough**). One of: • **Nearest** - preserves edge detail, but gives quite "blocky" textures. • **Bilinear** - gives good results, but can produce square artifacts at extreme zoom. • **Bicubic** - provides more rounded results, slightly blurrier but without the square artifacts.		

Control	Type	What it does	Opens this dialog box	Notes
Painter > *SourceGrade*	**Enabled**	checkbox	Enables source image grading. Used this to grade your source image when cloning from or painting through an image.		
Painter > *SourceGrade*	**Rgb**	entry box, slider	Changes the overall color saturation for all three color components of the source image. Moving this also moves the separate **Red**, **Green**, and **Blue** sliders.		
Painter > *SourceGrade*	**Red**	entry box, slider	Changes the color saturation in the Red component of the source image.		
Painter > *SourceGrade*	**Green**	entry box, slider	Changes the color saturation in the Green component of the source image.		
Painter > *SourceGrade*	**Blue**	entry box, slider	Changes the color saturation in the Blue component of the source image.		
Painter > *SourceGrade*	**Contrast**	entry box, slider	Changes the contrast of the source image.		
Painter > *SourceGrade*	**Saturation**	entry box, slider, reset	Changes the saturation of the source image.		
Painter > *SourceGrade*	**Saturation**	entry box, slider	Changes the color saturation of the source image. Used in addition to the RGB sliders.		
Painter > *SourceGrade*	**Value**	curve editor	Allows you to edit the color value curve for the source image.		

Control	Type	What it does	Opens this dialog box	Notes
PaintBuffer > *PaintBuffer*	**ColorDepth**	dropdown	Color depth of the paint buffer. 8, 16, or 32-bit color.		
PaintBuffer > *PaintBuffer*	**BufferSize**	dropdown	Onscreen resolution of the paint buffer. This controls the amount of detail you can use when painting, not the resolution of the patches in your project.		
PaintBuffer > *PaintBuffer*	**Clamp**	checkbox	If this is checked, Mari restricts the range of the image to values between 0 and 1.		
PaintBuffer > *Transform*	**Translation**	entry boxes	The amount that the buffer has been translated (moved onscreen) from the default.		
PaintBuffer > *Transform*	**Scale**	entry boxes	The amount that the buffer has been scaled (resized) from the default.		
PaintBuffer > *Transform*	**Rotation**	entry box, slider	The amount that the buffer has been rotated from the default.		
PaintBuffer > *Transform*	**Reset**	button	Resets the paint buffer to the default values, removing any translations or distortions you have applied.		
PaintBuffer > *Transform*	**Resetonbake**	dropdown	Either: • **Enabled** - the paint buffer automatically resets to default settings every time you bake the paint. • **Disabled** - any changes you have made to the paint buffer stay until you manually click the **Reset** button.		

39 Projection Palette

The **Projection** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Projection** palette holds controls for how Mari projects the paint onto the model. This includes details of the various masks available (edge mask, channel mask, depth mask, ambient occlusion mask, backface mask and fractal noise mask).

Projection Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *Masking* | **Masking Disabled**	checkbox	Disables all masking, regardless of channel, and overrides the **Masking Enabled** setting.		When enabled, a  icon displays in the status bar.
Projection Settings > *Mask*ing | **Mask Preview Color**	swatch	What color to display the masking on-screen.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *Mask*ing | **MaskPreviewEnabled**	checkbox	Shows the masking. Areas that are covered by the current defined mask(s) are shown colored. This includes all the masking currently in use – for example, if you have both the edge mask and depth mask turned on, Mari shows the effects of both simultaneously.		When enabled, a  icon displays in the status bar.
Projection Settings > *Painting* | **PaintingMode**	dropdown	The blending mode used when the paint bakes down onto the channel surface. The default is Normal (paint in the buffer overwrites the surface), but Mari supports a number of other blending modes.		
Projection Settings > *Painting* | **PaintingOpacity**	entry box, slider, reset	How opaque the paint is. This is a multiplier on the paint buffer contents. At 1.0, the paint bakes down to the surface with the same opacity as it is in the buffer. At 0.5, the paint applied to the surface is half as transparent as when it's in the buffer.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *Projection* | **ProjectionFilter**	dropdown	The image filtering to use when calculating how to apply the paint buffer onto the surface. One of: • **Nearest** - preserves edge detail, but gives quite "blocky" textures. • **Bilinear** - gives good results, but can produce square artifacts at extreme zoom.		
Projection Settings > *Projection* | **BakeBehavior**	dropdown	One of: • **Manual** - you have to bake manually. After a bake, the paint stays in the paint buffer until you manually clear it. • **ClearOnly** - you have to bake manually. After a bake, the paint buffer clears automatically. • **AutoBakeAndClear** - Mari bakes, and then clears the paint buffer, whenever you move the model.		
Projection Settings > *Projection* | **Projection**	dropdown	One of: • **Front** - paint only applies to the front of the model, as it is visible in the current view. • **Through** - paint applies to all surfaces on the model under your brush, whether or not there is something in front of them.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *Projection*	**ProjectOn**	dropdown	Either: • **All** - you can paint on all areas on your model(s), selected or not. • **SelectedOnly** - you can only paint on the currently selected areas.		
Projection Settings > **EdgeMask**	toggle	Whether the edge mask is turned on or not. If this is on, but **MaskPreviewEnabled** is off, the model is masked but you won't see the masking. That is, you can see the mask's effects, but not the mask itself.		When enabled, a  icon displays in the status bar.
Projection Setttings > *EdgeMask* > *General*	**Falloff Curve**	curve editor, reset	Sets how the edge masking falloff works. The X axis is the transition from the **Falloff Start** to **Falloff End.** The Y axis is how paintable the target pixel is. By default, the curve runs from the bottom at the left up to the top at the right - so there's a smooth, constant falloff.		
Projection Settings > *EdgeMask* > *General*	**FalloffEnd**	entry box, slider, reset	Controls where the edge mask ends on the model. The higher the value, the closer, more forward facing the mask finishes.		Range: 0.00 to 1.00 Reset: 0.00

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *EdgeMask* > *General* | **FalloffStart**	entry box, slider, reset	Controls where the edge mask starts on the model. The higher the value, the more forward facing the masking starts. If this is higher than the **FalloffEnd**, areas facing the view are paintable, and areas oblique to the view are masked. If this is lower, facing areas are masked and oblique areas are paintable.		Range: 0.00 to 1.00 Reset: 0.00
Projection Settings > **ChannelMask**	toggle	Whether the channel mask is turned on or not. If this is on, but **MaskPreviewEnabled** is off, the model is masked but you won't see the masking. That is, you can see the mask's effects, but not the mask itself.		When enabled, a  icon displays in the status bar.
Projection Settings > *ChannelMask* > *General* | **MaskChannel**	dropdown	Sets the channel holding the mask for the paint buffer. This mask sets the paintable area within the buffer.		
Projection Settings > *ChannelMask* > *General* | **MaskAmount**	entry box, slider, reset	The amount that the mask affects the paint buffer. 1.0 means that the mask absolutely controls where you can paint; the effects of the mask decrease as the value gets lower.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *ChannelMask* > *General* | **MaskContrast**	entry box, slider, reset	The contrast applied to the original channel to derive the mask. At 1.0, the mask comes directly from the original channel. Lower values make the mask fuzzier than the input channel, higher values make it sharper than the input channel.		
Projection Settings > *ChannelMask* > *General* | **Mask Curve**	curve editor, reset	Sets how the channel masking works. The x axis is the color of the source pixel (black to the left, white to the right). The y axis is how paintable the target pixel is. By default, the curve runs from the bottom at the left up to the top at the right - so black pixels are totally masked, white pixels are totally paintable, and there's a constant curve between the two. Use this if you want to change which pixel values are masked.		
Projection Settings > *ChannelMask* > *General* | **Invert**	check box	Whether to invert the input from the mask. If this is selected, the mask data is black on white rather than white on black.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > **Ambient Occlusion Mask**	toggle	Whether the ambient occlusion mask is turned on or not. If this is on, but **MaskPreviewEnabled** is off, the model is masked but you won't see the masking. That is, you can see the mask's effects, but not the mask itself. Before using this, you should calculate the ambient occlusion for each object in the project (**Objects** menu, select **AmbientOcclusion**).		When ambient occlusion masking is enabled, a  icon displays in the status bar.
Projection Settings > *AmbientOcclusionMask* > *General* | **Mask Amount**	entry box, slider, reset	The amount of ambient occlusion masking to apply.		
Projection Settings > *AmbientOcclusionMask* > *General* | **MaskContrast**	entry box, slider, reset	The contrast applied to the ambient occlusion to derive the mask. At 1.0, the mask comes directly from the calculated ambient occlusion. Lower values make the mask fuzzier than the ambient occlusion, higher values make it sharper.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > *AmbientOcclusionMask* > *General*	**MaskCurve**	curve editor, reset	Controls how the ambient occlusion pixel values relate to the degree of masking. The horizontal axis is the darkness of the occluded pixels (black to the left, white to the right), the vertical axis is the degree of visibility. By default, this is a direct line, where white pixels are totally masked, black pixels are totally unmasked, and 50% gray is 50% masked.		
Projection Settings > *AmbientOcclusionMask* > *General*	**Invert**	checkbox	If this is selected, the mask data is black on white rather than white on black.		
Projection Settings > **DepthMask**		toggle	Whether the depth mask is turned on or not.		When enabled, a  icon displays in the status bar.
Projection Settings > *DepthMask* > *General*	**Start**	entry box, slider, reset	The depth in the scene for the depth masking to start.		
Projection Settings > *DepthMask* > *General*	**End**	entry box, slider, reset	The depth in the scene for the depth masking to finish.		
Projection Settings > *DepthMask* > *General*	**Falloff**	entry box, slider, reset	How fast the depth masking applies. Lower values make the mask apply slowly, higher values make it apply more quickly.		

Control	Type	What it does	Opens this dialog box	Notes
Projection Settings > **BackfaceMask**	toggle	Whether the backface mask is turned on or not.		When enabled, a  icon displays in the status bar.
Projection Settings > **Fractal Noise Mask**	toggle	Whether the fractal noise mask is turned on or not.		When enabled, a  icon displays in the status bar.
Projection Settings > *Fractal Noise Mask* > *General* | **Seed**	entry box, slider, reset	Changes the pattern of the noise by moving the pattern through 3D space.		
Projection Settings > *Fractal Noise Mask* > *General* | **Contrast**	entry box, slider, reset	Controls the level of contrast applied to the fractal noise features to derive the mask.		
Projection Settings > *Fractal Noise Mask* > *General* | **Roughness**	entry box, slider, reset	Determines the roughness of the fractal noise features.		
Projection Settings > *Fractal Noise Mask* > *General* | **Size**	entry box, slider, reset	Determines the size of the fractal noise features.		
Projection Settings > *Fractal Noise Mask* > *General* | **Mask Amount**	entry box, slider, reset	The amount that the mask affects the paint buffer. 1.0 means that the mask absolutely controls where you can paint; the effects of the mask decrease as the value gets lower.		

Control	Type	What it does	Opens this dialog box	Notes
ProjectionSettings > *Fractal Noise Mask* > *General* | **Mask Curve**	curve editor, reset	Controls how the fractal noise relates to the degree of masking, based on the above fields. This allows you to fine tune the contrast and pattern appearance of the fractal noise mask.		
Projection Settings > *Fractal Noise Mask* > *General* | **Invert**	checkbox	If this is selected, the mask data is black on white rather than white on black.		

40 Shelf Palette

The **Shelf** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Shelf** stores sets of brushes and colors. These include:

- **Menu** shelf - the content of the **F9** menu.
- **Personal** shelf (with customized items) - selected items you use regularly.
- **Basic Brushes** shelf - a set of predefined basic brushes.
- **Hard Surface Brushes** shelf - a set of predefined hard surface brushes.
- **Organic Brushes** shelf - a set of predefined organic brushes.
- **Project** - shelf items for just the current project.

Shelf palette fields

Control	What it does	Notes
Types of Controls	Select from shelves, click icons to add new shelf, spawn floating shelves, delete custom shelves.	Mari saves shelves as **.msh** files, and items within shelves (which you can save through a right-click option) as **.msi** files. Right-click to toggle icon size (for example, to use smaller icons to create color swatches).

41 Snapshots Palette

The **Snapshots** palette and the controls that can be found on it are described in the table below. When controls also bring up additional dialogs, these are referenced for more information.

What It Does

The **Snapshots** palette displays:

- a list of snapshots for the entire project or currently selected channel
- buttons to take, revert, or delete channel snapshots
- information about snapshots, such as name, when they were created and by what user.

Snapshots Palette Fields

Control	Type	What it does	Opens this dialog box	Notes
Channels > **All**	button	Displays a list of all snapshots in the project.		
Channels > **Current**	button	Displays a list of snapshots for the currently selected channel.		
Created	info	The date and time when the snapshot was taken.		
Preview	thumbnail	A thumbnail preview of the snapshot.		
Name	info	The name of the snapshot.		

Control	Type	What it does	Opens this dialog box	Notes
User	info	The name of the user that created the snapshot.		
New	button	Takes a new snapshot. Depending on whether Channels > **All**, or Channels > **Current** is selected, this button behaves differently. If **All** is selected, a snapshot is taken for all channels in a project. If **Current** is selected, a snapshot is only taken for the current channel.	Snapshot All Channels. Snapshot Channel.	
Extract	button	Extracts the snapshot into a new channel in the **Channels** palette and populates the **Layers** palette with the layers of the snapshot.	Extract Snapshot	This option is only available when the Channels > **Current** button is active.
Revert	button	Loads the selected snapshot.		
Delete	button	Deletes the selected snapshot.	Delete Snapshot	

42 New Project Dialog

The **New Project** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

The **New Project** dialog box lets you select geometries and various options for a new Mari project. Use the **Path** control to select an **.obj**, **.ptx**, or **.abc** file you want to use in the project.

Resize the dialog box to display long filenames or select multiple files to display more than one geometry, if they are of the same file type. Mari checks the model for any errors that might prevent it from processing, for example whether UVs overlap or touch border edges. A **Mesh Sanity Check** dialog displays any warnings or errors. (Errors cancel opening the model, but you can continue with warnings.)

Depending on the size and complexity of textures, it can take several minutes the first time you load them into a Mari project. Once saved, however, the project should open quickly in future.

How to Access It

- *Menubar* | **File** > **New**
- *Keyboard* | **Ctrl**/**Cmd**+**N**
- *Projects tab* | **New** button
- *Projects tab* | *Right-click* > **New**
- *Toolbar* | 

New Project Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Name	entry box	Lets you specify the name of the project.		This is for you to identify the project only (this is not a filename).
Geometry | **Path**	entry box, dropdown, button	Opens **.obj**, **.ptx**, or **.abc** files. Dropdown lists the last 10 opened. Once you select a file, the **Mesh options** appear under the **Root Path**.	**Pick Mesh** dialog	Select by either typing the **Path**, selecting from the dropdown of the last 10 files selected, or clicking the icon to browse to a file.
Geometry > *Mesh options* | **Mapping Scheme**	dropdown	If there is a UV map available, and you would like to use it, select **UV if available, Ptex otherwise**. If you prefer to use Ptex, select **Force Ptex**. This option loads the selected geometry and replaces the existing UV map with a Ptex map.		Only available when choosing **.obj** or **.abc** files in the **Path**.
Geometry > *Mesh options* | **Selection Sets**	dropdown	Selection sets have two options, to either: • **Create From Face Groups** - this is the default behavior and allows the use of selection sets in Mari. • **Don't Create** - if you choose not to create a selection set, Mari does not create any from the file.		Only available when choosing **.obj** files in the **Path**.

Control	Type	What it does	Opens this dialog box	Notes
Geometry > Mesh options | **Multiple Geometries Per Object**	dropdown	If your **.obj** consists of multiple geometries, you have the option to **Merge Geometries Into One**, which is the default behavior, or **Create Separate Geometries (Ptex Only)**. If you select **Merge Geometries Into One**, Mari combines the individual geometries into a single geometry, while selecting **Create Separate Geometries (Ptex Only)** creates individual geometries.		Only available when choosing **.obj** files in the **Path**. Even if you select **Create Separate Geometries (Ptex Only)**, Mari only displays a single geometry on the canvas. However, when you export a channel you have the option to export individual **.ptx** files for each geometry.
Geometry > Mesh options | **Start Frame** and **End Frame**	entry box	Set the frame range from the source file to import.		Only available when choosing **.obj** and **.abc** file sequences in the **Path**.
Geometry > Mesh options | **Single Frame**	button	Sets the other fields to only import the first frame from the animation in the object file.		Only available when choosing **.obj** and **.abc** file sequences in the **Path**.
Geometry > Mesh options | **All Frames**	button	Sets the other fields to import the entire animation from the object file.		Only available when choosing **.obj** and **.abc** file sequences in the **Path**.

Control	Type	What it does	Opens this dialog box	Notes
Geometry > Mesh options | **Process each geometry file as a**	dropdown	For Ptex files, there are two choices for the geometry mesh options: • **Separate Object** - creates only one object with one geometry. • **Separate Geometry In One Object** - creates only one object, but has multiple geometries within it.		Only available when choosing **.ptx** files in the **Path**. The option to **Separate Geometry In One Object** is essentially the inverse of the Ptex channel export process, and allows project reconstruction.
Geometry > Mesh options | **Merge Type**	dropdown	Choose whether to merge selected items from the object hierarchy tree as: • **Single Mesh** - merges selected geometry into one single mesh in a GeoEntity. Note that this implies that the information about the original geometries cannot be accessed once the merge is done. • **Just Merge Nodes** - merges selected geometry into one GeoEntity while retaining the metadata and mesh information about the original individual geometries. Note, this information can only be accessed by more technical users using the C API.		Only available when choosing **.abc** files in the **Path**.

Control	Type	What it does	Opens this dialog box	Notes
Geometry > Mesh options | **Scene**	information	In the object hierarchy, shows all the geometries or meshes, cameras, and groups that are part of the selected Alembic file. Note, expanding the parent row, reveals the child geometries beneath it.		Only available when choosing **.abc** files in the **Path**.
Geometry > Mesh options | **Merge**	checkbox	Select the checkbox to determine if a geometry is to be merged with another on project creation.		Only available when choosing **.abc** files in the **Path**. For more information on merging Alembic geometry, see *Create New Project* under the *Alembic* chapter in the *Mari User Guide*.
Geometry > Mesh options | **Frame Offset**	entry box	Set by how many frames to offset the loading of an animated object. You can specify a frame range, or simply a number of frames.		Only available when choosing **.abc** files in the **Path**.
Texture | **Root Path**	dropdown, button	Displays the root path for the project. This is where Mari looks for any existing textures to import as it creates the channels.	**Choose Base Path** dialog	This is the value that Mari substitutes for $PATH in the import templates in the bottom list.
Texture | **Scan**	button	Scans the Root Path for any existing texture files.		After scanning the Root Path, you should always set the **Size** of the texture files manually. The default values Mari sets may not be correct as channels can contain many different patch sizes.

Control	Type	What it does	Opens this dialog box	Notes
Texture | **Prefix**	entry box	Filename prefix for existing texture files, if applicable.		
Texture | **Create**	checkbox	Select this to create the listed channel.		
Texture | **Import**	checkbox	Select this to import existing textures into the channel after creating it.		
Texture | **Name**	information	Name of the channel to create. Mari sets a default value, but you can change this.		For example, color, specRough, dispFine, dispBroad, colorDetail, colorDetailMask.
Texture | **Size**	dropdown	Patch size for the new channel. Mari sets a default value, but you can change this.		**256x256**, **512x512**, **1024x1024**, **2048x2048**, **4096x4096**, **8192x8192**, **16384x16384**, **32768x32768**
Texture | **Type**	dropdown	Channel type. Mari sets a default value, but you can change this.		**Color** or **Scalar**
texture | **File Space**	dropdown	The file space used when generating vectors. Mari sets a default but you can change this.		**Normal** or **Vector.**
Texture | **Fill**	swatch	Color to fill the new channel. Mari sets a default value, but you can change this.		Click the swatch to change the color.
Texture | **Depth**	dropdown	The color depth size. Mari sets a default value, but you can change this.		**8bit (Byte)**, **16bit (Half)**, **or 32bit (Float)**.

Control	Type	What it does	Opens this dialog box	Notes
Texture | **Files**	entry	The filename template used to pick existing textures to import into the channel. Mari sets a default value, but you can change this, or you can use the button to open a dialog allowing you to manually pick the files.		
Texture | 	button	Opens a dialog box allowing you to pick the textures for Mari to import into the new channel.	Import Dialog	
Texture | 	image	Indicates that Mari has not found any textures to import.		If there are textures to import, Mari displays the number of patches available.

43 Select Color Dialog

The **Select Color** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

The **Select Color** dialog box lets you view and change colors. The controls on this palette all work together - as you change the color through one control, the other controls update to show your change.

How to Access It

- *Tools toolbar* | **Foreground** color swatch
- *Tools toolbar* | **Background** color swatch
- *Colors palette* | **Foreground** color swatch
- *Colors palette* | **Background** color swatch
- *Add Channel dialog* | **Color** color swatch
- *HSV palette* | **Color swatch**

Select Color dialog box fields

Control	Type	What it does	Notes
	swatch	Displays currently selected color.	
	entry box, slider	Specify **Red** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Green** values.	Range: 0.000 to 1.000

Control	Type	What it does	Notes
	entry box, slider	Specify **Blue** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Alpha** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Hue** values.	Range: 0.000 to 0.999
	entry box, slider	Specify **Saturation** values.	Range: 0.000 to 1.000
	entry box, slider	Specify **Value** values.	Range: 0.000 to 1.000
History Swatches	swatch	These swatches store the 5 most recently selected colors. When a new color is selected, it is added to the top of the list. Clicking on a swatch selects it as the current color.	You can drag and drop from the current swatch to the history swatches to manually arrange the colors.
HSV	tab: field, sliders, option buttons	Use this to pick colors from a Hue/Saturation/Value field.	To create custom color spectrums. Adjust the field values using the controls on the right, then click in the field to set the foreground color.
Values	tab: field	Use the fields to manually enter RGBA and HSV values for either **Byte (8 Bit)**, **Half (16 bit)**, or **Float (32 Bit)** categories.	This sets the default values for RGBA and HSV colors when creating either 8 bit, 16 bit, or 32 bit channels.
Grey	tab: sliders, buttons	Use this to pick a gray value from the gradient, or one of the presets.	

Control	Type	What it does	Notes
Intensity	entry box, slider	Adjusts the intensity of colors in the **Select Color** dialog to select HDR colors. HDR colors are considered to be any color with an intensity that is greater than 1.	From 0 to 4096; defaults to 0. The maximum range of the **Intensity** slider can be adjusted in the Mari Preferences Dialog under Color > Color Management Defaults | **Color Picker Maximum**.
	button	Pick a color from within Mari, as well as from your desktop or other windows	
Canvas	dropdown	The type of pixels you want the color picker to pick from. Either **Pick screen Pixels** or **Pick raw pixels**.	

44 Advanced Blending Mode

The **Advanced Blending** mode pop-up from within the **Layers** palette is described below with functions for how to access it. A list of the controls in the pop-up can be found in the table below.

What It Does

The **Advanced Blending** mode pop-up lets you adjust the blended colors before the blending mode is applied to the selected layers and layered shaders. These modes can be applied to each layer independently, regardless of whether it already has other adjustments applied to it.

How to Access It

- *Button* | Layers Palette > 
- *Button* | Shaders Palette > Shader Layers Tab Fields > 
- *Button* | Mask Stack > 
- *Button* | Adjustment Stack > 

Advanced Blending Mode Fields

Control	Type	What it does	Opens this dialog	Notes
Mode	dropdown	Select the blend mode that you want to modify with the advanced settings.		
Amount	entry box, slider	Adjusts the blend mode amount.		

Control	Type	What it does	Opens this dialog	Notes
Amount Enabled	dropdown	**Enable** or **Disable** the ability to change the blend mode amount.		If **Amount** has already been modified and **Amount Enabled** is set to **Disable**, then the amount is not reset to the default. It is locked to the amount entered when **Disable** was set.
Blending	dropdown	Choose whether to modify the blending mode with **Basic** or **Advanced** settings. If you select **Basic**, the **Component** field and the curve editor fields cannot be modified.		
Component	dropdown	Select either the **Greyscale**, **Red**, **Green**, **Blue**, or **Luminance** components to adjust when modifying the curve editors and applying the blend mode.		
This Layer	curve editor	Maps between input and output values for the selected layer.		Drag to move points on the graph. Add points by clicking on the curve. Edit a point by right-clicking it.
Below layer	curve editor	Maps between input and output values for the layer stack below the selected layer.		Drag to move points on the graph. Add points by clicking on the curve. Edit a point by right-clicking it.
Swizzle Red	dropdown	Select the component - **R**, **G**, **B**, **A**, **One**, or **Zero** - that is output from the Red color component. This allows you to re-arrange the RGBA values.		By default, the Red component is set to output red color values.

Control	Type	What it does	Opens this dialog	Notes
Swizzle Green	dropdown	Select the component - **R**, **G**, **B**, **A**, **One**, or **Zero** - that is output from the Green color component. This allows you to re-arrange the RGBA values.		By default, the Green component is set to output green color values.
Swizzle Blue	dropdown	Select the component - **R**, **G**, **B**, **A**, **One**, or **Zero** - that is output from the Blue color component. This allows you to re-arrange the RGBA values.		By default, the Blue component is set to output blue color values.
Swizzle Alpha	dropdown	Select the component - **R**, **G**, **B**, **A**, **One**, or **Zero** - that is output from the Alpha component. This allows you to re-arrange the RGBA values.		By default, the Alpha component is set to output alpha values.

45 Add Channel Dialog

The **Add Channel** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

This allows you to add a single channel to your project. The dropdown at the top of the dialog box lets you select from recently created channels. If you select a channel from the dropdown, Mari updates the rest of the fields with the details you used last time. You can change any of the values if required.

How to Access It

- *Menubar* | **Channel** > **Add Channel**
- *Right-click* | in Channels Palette > **Add Channel**
- *Button* | Channels Palette > 
- *Button* | *Shaders Palette* > 

Add Channel Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
<Previous channel names>	dropdown	This holds the names of recently created channels. Select a channel from the list, and the rest of the dialog box updates with the details from the last time the channel was created.		

Control	Type	What it does	Opens this dialog box	Notes
Name	information, dropdown	Name of the channel to create.		
Size	dropdown	Patch size for the new channel. Either **256x256**, **512x512**, **1024x1024**, **2048x2048**, **4096x4096**, **8192x8192**, **16384x16384**, or **32768x32768**.		
Depth	dropdown	Color depth for the new channel.Either **8bit (Byte)**, **16bit (Half)**, or **32-bit (Float)**.		
ColorSpace	dropdown	The type of channel. Either **Color** or **Scalar**.		Scalar channels do not use color correction.
File Space	dropdown	The type of file space used for vector painting. Either **Normal** or **Vector**.		
Color	swatch	Color to fill the new channel. Click the swatch to change the color.	Select Color Dialog	

46 Add Multiple Channels Dialog

The **Add Multiple Channels** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

Adds multiple channels at once. Mari takes the channels available from predefined sets of standard channels for types of assets - for example, the channels required to paint a vehicle. You can select which channels from the set to create.

Also, if there are existing textures for the channels, Mari can automatically load these in as it creates the channels. Mari automatically detects existing textures that conform to the selected naming convention. You can write config files that add new sets of channels to the **Category** field. See the *Extending Mari* chapter in the *Mari User Guide* for details.

How to Access It

• *Menubar* | **Channel** > **Channel Presets**

• *Right-click* | channel in Channels Palette > **Channel Presets**

• *Button* | Channels Palette > 

Add Multiple Channels Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Root Path	dropdown	Displays the root path for the project. This is where Mari looks for any existing textures to import as it creates the channels.	Choose Base Path	This is the value that Mari substitutes for **$PATH** in the import templates in the bottom list.
Scan	button	Scans the Root Path for any existing texture files.		
Import	dropdown	Whether to import all patches in the project or only the selected ones. This applies to every channel being imported during the creation.		
Resize	dropdown	How Mari handles patch/image size mismatches (for example, attempting to import a 1024x1024 image to a 2048x2048 patch). You can select either to resize the images to match the patches, or to resize the patches to match the images.		
Prefix	entry box	Filename prefix for existing texture files, if applicable.		
Create	checkbox	Select this to create the listed channel.		
Import	checkbox	Select this to import existing textures into the channel after creating it.		
Name	information	Name of the channel to create.		For example, color, specRough, dispFine, dispBroad, colorDetail, colorDetailMask.

Control	Type	What it does	Opens this dialog box	Notes
Size	dropdown	Patch size for the new channel. Mari sets a default value, but you can change this.		
Type	dropdown	Channel type. Either Color or Scalar. Mari sets a default value, but you can change this.		
Fill	swatch	Color to fill the new channel. Mari sets a default value, but you can change this.		Click on the swatch to set the color.
Files	entry	The filename template used to pick existing textures to import into the channel. Mari sets a default value, but you can change this, or you can use the button to open a dialog allowing you to manually pick the files.		
	button	Opens a dialog box allowing you to pick the textures for Mari to import into the new channel.	Import Channel	
	image	Indicates that Mari has not found any textures to import.		If there are textures to import, Mari displays the number of patches available.

47 Masks Formats Dialog

The **Masks Formats** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

This allows you to set up a designated material channel to use when you are creating a layered shader.

How to Access It

• *Menubar* | **Shading** > **Add New Shader** > **Layered**

• *Right-click* | in Shaders Palette > **Add New Shader** > **Layered**

• *Button* | Shaders Palette >  > **Layered**

Mask Formats Dialog Box fields

Control	Type	What it does	Opens this dialog box	Notes
Size	dropdown	Set the channel size when creating a mask to be: • **256x256** • **512x512** • **1024x1024** • **2048x2048** • **4096x4096** • **8192x8192** • **16384x16384** • **32768x32768**		
Depth	dropdown	Sets the channel depth when creating a mask to be: • **8bit (Byte)** • **32bit (Float)** • **16bit (Half)**		

48 Channel Presets Dialog

The **Channel Presets** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Allows you to set up preferences for quickly creating channels through the **Channels** palette or menu. These presets include options such as the color depth size, patch size, file space, and color space. This gives you the opportunity to quickly set up a channel template for channel types you know are going to be created numerous times.

How to Access It

• *Menubar* | **Channels** > **Channel Presets**

• *Right-click* | in Channels Palette > **Channel Presets**

Channel Preset Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Root Path	entry box, dropdown, button	Specify the file path for the creation of new channel templates.		The browse and scan buttons also allow you to search for the file location.
Import	dropdown	Select which patches to import if a channel is being imported for the creation of the template. Options are: **All Patches**.		

Control	Type	What it does	Opens this dialog box	Notes
Resize	dropdown	Select which files should be resized when patches are being imported for channel template creation. Options are: **Patches to fit images** or **Images to fit patches**.		
Prefix	entry box	Specify a prefix for organizing created channels.		
Create	checkbox	Select which channel templates you want to create from the list in the dialog.		
Import	checkbox	Select which channel templates you want to create from imported channels. Import settings were selected from the earlier option in the dialog.		
Name	information	Name of the channel type; for instance, color, displacement, or specular.		
Size	dropdown	Select a patch size for the channels from the options: **256x256**, **512x512**, **1024x1024**, **2048x2048**, **4096x4096**, **8192x8192**, **16384x16384**, **32768x32768**.		Channels can be resized later from the **Channels** menu or palette if necessary.
Type	dropdown	Select a color space for the created channel template. Options are: **Color** or **Scalar**.		
File Space	dropdown	Select a file space for the created channel template. Options are: **Normal** and **Vector**.		
Fill	swatch	Select a color to use for the background of channel template.	Select Color Dialog	

Control	Type	What it does	Opens this dialog box	Notes
Depth	dropdown	Select a color depth size for the created channel template. Options are: **8bit (Byte)**, **16bit (Half)**, **32bit (Float)**.		The color depth size for channels can be resized later from the **Channels** menu or palette if necessary.
Files	entry box	Specify a file location to be imported.		
	button	Select a file to import for the channel template. This corresponds to the File entry box above.		
	icon			

49 Convert Type Dialog

The **Convert Type** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Converts the color depth of the selected channel into a different bit depth. The color depth determines the number of pixels per RGB channel. Existing channels set to another color depth can be converted by simply selecting them and opening the **Convert Type** dialog box.

How to Access It

- *Menubar* | **Channels** > **Convert Channel**
- *Right-click* | in *Channels Palette* > **Convert Channel**
- *Button* | in *Channels Palette* > 

Convert Type Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Type	dropdown	The color depth options for converting the selected channel. Depth sizes are: **8bit (Byte)**, **16bit (Half)**, and **32bit (Float)**.		Note that you should only see two options in the dropdown menu, as it does not show the current depth size of your channel.

50 Copy Multiple Textures Dialog

The **Copy Multiple Textures** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you copy the textures from one layer to another. If you have multiple objects in your project, you can copy the textures between objects.

How to Access It

Menubar | **Patches** > **Copy Textures**

Copy Multiple Textures Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Source Object	dropdown	Select the object holding the source layer.		
Source Layer	dropdown	The layer to copy the patches from.		
Select By	dropdown	Select how to identify the patches on the source layer.		

Control	Type	What it does	Opens this dialog box	Notes
Source Range	entry box	The patch numbers of the patches to copy textures from. Enter the patch numbers. You can separate patch numbers with commas, or enter ranges. For example: 1001,1003,1005-1008		
Target Object	dropdown	The object to copy the patches onto.		
Target Layer	dropdown	The layer to copy the patches onto. If required, this can be the same as the source layer.		
Offset	entry box	A numeric offset for the patch numbers. For example, if this is set to 100, the source patch 1001 is copied to 1101. Use this to copy textures between sides of symmetrical models.		The default for the Offset is zero.

51 Channel Transfer Dialog

The **Channel Transfer** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you transfer channels from one object or version to another.

How to Access It

- *Menubar* | **Channels** > **Transfer**
- *Right-click* | in Channels Palette > **Transfer**

Channel Transfer Dialog Fields

Control	Type	What it does	Opens this dialog box	Notes
Options > *Source*	**Object**	dropdown	Select the object you want to transfer channels from.		
Options > *Source*	**Version**	dropdown	Select the version of the object you want to transfer channels from.		
Options > *Destination*	**Object**	dropdown	Select the object you want to transfer channels to.		

Control	Type	What it does	Opens this dialog box	Notes
Options > *Destination*	**Version**	dropdown	Select the version of the object you want to transfer channels to.		
	button	Moves all the channels that appear in the source channel list to the destination channel list.		
	button	Moves only the selected channel in the source channel list to the destination channel list.		Multiple selections in the source list can be moved to the destination list.
	button	Moves only the selected channel in the destination channel list back to the source channel list.		Multiple selections in the destination list can be moved to the source list.
	button	Moves all the channels that appear in the destination channel list back to the source channel list.		
Ok	button	Accepts the channel transfer parameters and starts the transfer.		
Cancel	button	Cancels the channel transfer and closes the **Channel Transfer** dialog.		
Advanced > *Source*	**Frame**	entry box, incrementer	For animated objects, select the frame number you want to transfer channels from.		

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Source*	**Patches**	dropdown, entry box, incrementer	Select **All**, **Selected**, or **Range** to specify which patches are transferred from. You can only set **Patches** to **Selected** if you have already selected patches on the model prior to opening the **Channel Transfer** dialog.		
Advanced > *Destination*	**Frame**	entry box, incrementer	For animated objects, select the frame number you want to transfer channels to.		
Advanced > *Destination*	**Patches**	dropdown, entry box, incrementer	Select **All**, **Selected**, or **Range** to specify which patches are transferred to. You can only set **Patches** to **Selected** if you have already selected patches on the model prior to opening the **Channel Transfer** dialog.		
Advanced > *Sampling*	**Search**	dropdown	Defines the direction of the search: • **Bidirectional** - both forwards and backwards ray casting. • **Forward** - forward ray casting only. • **Backward** - backward ray casting only. • **Radial** - in a sphere outwards from each point.		By default, the search type is set to **Radial**.

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Sampling*	**Interpolation**	dropdown	Interpolation is similar to Photoshop's sampling functionality. You can select the method Mari uses to average out pixels from either: • **Nearest Neighbor** - selects the nearest pixel for sampling. • **Inverse Distance Weighted** - weights the average on the closest pixels. • **Inverse Distance Weighted (Smoother)** - weights the average on the closest pixels with a priority to providing smoother sampling. • **Inverse Distance Weighted (Sharper)** - weights the average on the closest pixels with a priority to providing sharper sampling.		Interpolation in Mari is distance-based, not size-based, as sampling is done in 3D space.
Advanced > *Sampling*	**Samples**	entry box, slider, incrementer	Set the number of points the search is to find and combine when sampling.		By default, the sample size is set to 16.
Advanced > *Sampling*	**Object Has Moved**	dropdown	Select **Yes** or **No** to specify whether the object has moved. This is to stipulate where the new object is in relation to the old object or version. If the topology of the object has changed, or the object has been moved across the canvas, select **Yes**.		If the object has a different orientation, for instance, it has been rotated, data won't be transferred correctly.
Advanced > *Sampling*	**Flatten**	dropdown	Select whether or not to **Flatten** the layers in the selected channels prior to transferring the channels.		
Advanced > *Sampling*	**Bleed Edges**	dropdown	Choose **Yes** or **No** to specify whether or not to bleed patch edges when applying the transfer.		

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Sampling* | **Range**	dropdown, entry box, incrementer	Sets how the range for the search distance, when performing the transfer, is limited: • **Infinite** - there is no limit; Mari attempts to find a pixel in the source image data. • **Object Size Percentage** - the maximum search distance is expressed as a percentage of the destination object's size. For example, if the destination object is 10 world-space units and you set the range value to 10, then the maximum distance becomes 1 world-space unit. • **World Units** - the maximum search distance expressed directly in world space. For example, if you set the range value to 2, then the maximum distance becomes 2 world space units.		
Advanced > *Sampling* | **Fill Color**	dropdown	Sets the fill color for new patches to either **Transparent**, **Black**, **White**, **Mid-gray**, **Magenta**, **Foreground**, or **Background**.		
	button	Resets the dropdown fields in the **Advanced** > **Sampling** tab to the default options.		
Ok	button	Accepts the channel transfer parameters and starts the transfer.		
Cancel	button	Cancels the channel transfer and closes the **Channel Transfer** dialog.		

52 Layer Transfer Dialog

The **Layer Transfer** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you transfer layers from one object or version to another.

How to Access It

- Menubar | **Layers** > **Transfer**
- Right-click | layer in Layers Palette > Transfer

Layer Transfer Dialog Fields

Control	Type	What it does	Opens this dialog box	Notes
Options > *Source*	**Object**	dropdown	Select the object you want to transfer layers from.		
Options > *Source*	**Version**	dropdown	Select the version of the object you want to transfer layers from.		
Options > *Source*	**Channel**	dropdown	Select the channel you want to transfer layers from.		

Control	Type	What it does	Opens this dialog box	Notes
Options > *Destination*	**Object**	dropdown	Select the object you want to transfer layers to.		
Options > *Destination*	**Version**	dropdown	Select the version of the object you want to transfer layers to.		
Options > *Destination*	**Channel**	dropdown	Select the channel you want to transfer layers to.		
	button	Moves all the layers that appear in the source layer list to the destination layer list.		
	button	Moves only the selected layer in the source layer list to the destination layer list.		Multiple selections in the source list can be moved to the destination list.
	button	Moves only the selected layer in the destination layer list back to the source layer list.		Multiple selections in the destination list can be moved to the source list.
	button	Moves all the layers that appear in the destination layer list back to the source layer list.		
Ok	button	Accepts the layer transfer parameters and starts the transfer.		
Cancel	button	Cancels the layer transfer and closes the **Layer Transfer** dialog.		

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Source*	**Frame**	entry box, incrementer	For animated objects, select the frame number you want to transfer layers from.		
Advanced > *Source*	**Patches**	dropdown, entry box incrementer	Select **All**, **Selected**, or **Range** to specify which patches are transferred from. You can only set **Patches** to **Selected** if you have already selected patches on the model prior to opening the **Layer Transfer** dialog.		
Advanced > *Destination*	**Frame**	entry box, incrementer	For animated objects, select the frame number you want to transfer layers to.		
Advanced > *Destination*	**Patches**	dropdown, entry box incrementer	Select **All**, **Selected**, or **Range** to specify which patches are transferred to. You can only set **Patches** to **Selected** if you have already selected patches on the model prior to opening the **Layer Transfer** dialog.		
Advanced > *Sampling*	**Search**	dropdown	Defines the direction of the search: • **Bidirectional** - both forwards and backwards ray casting. • **Forward** - forward ray casting only. • **Backward** - backward ray casting only. • **Radial** - in a sphere outwards from each point.		By default, the search type is set to **Radial**.

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Sampling*	**Interpolation**	dropdown	Interpolation is similar to Photoshop's sampling functionality. You can select the method Mari uses to average out pixels from either: • **Nearest Neighbor** - selects the nearest pixel for sampling. • **Inverse Distance Weighted** - weights the average on the closest pixels. • **Inverse Distance Weighted (Smoother)** - weights the average on the closest pixels with a priority to providing smoother sampling. • **Inverse Distance Weighted (Sharper)** - weights the average on the closest pixels with a priority to providing sharper sampling.		Interpolation in Mari is distance-based, not size-based, as sampling is done in 3D space.
Advanced > *Sampling*	**Samples**	entry box, slider, incrementer	Set the number of points the search is to find and combine when sampling.		By default, the sample size is set to 16.
Advanced > *Sampling*	**Object Has Moved**	dropdown	Select **Yes** or **No** to specify whether the object has moved. This is to stipulate where the new object is in relation to the old object or version. If the topology of the object has changed, or the object has been moved across the canvas, select **Yes**.		If the object has a different orientation, for instance, it has been rotated, data won't be transferred correctly.
Advanced > *Sampling*	**Flatten**	dropdown	Select whether or not to **Flatten** the selected layers prior to transferring them.		
Advanced > *Sampling*	**Bleed Edges**	dropdown	Choose **Yes** or **No** to specify whether or not to bleed patch edges when applying the texture transfer.		

Control	Type	What it does	Opens this dialog box	Notes
Advanced > *Sampling* | **Range**	dropdown, entry box, incrementer	Sets how the range for the search distance, when performing the transfer, is limited: • **Infinite** - there is no limit; Mari attempts to find a pixel in the source image data. • **Object Size Percentage** - the maximum search distance is expressed as a percentage of the destination object's size. For example, if the destination object is 10 world-space units and you set the range value to 10, then the maximum distance becomes 1 world-space unit. • **World Units** - the maximum search distance expressed directly in world space. For example, if you set the range value to 2, then the maximum distance becomes 2 world space units.		
Advanced > *Sampling* | **Fill Color**	dropdown	Sets the fill color for new patches to either **Transparent**, **Black**, **White**, **Mid-gray**, **Magenta**, **Foreground**, or **Background**.		
	button	Resets the dropdown fields in the **Advanced** > **Sampling** tab to the default options.		
Ok	button	Accepts the layer transfer parameters and starts the transfer.		
Cancel	button	Cancels the layer transfer and closes the **Layer Transfer** dialog.		

53 Export Dialog

The **Export** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Invoked by the export channel functions, export flattened channel functions, export layer functions, or export flattened layers functions, the **Export** dialog box lets you specify options for exporting channels or layers from the current Mari project, in either flattened or non-flattened states.

If you export with **Small Textures** set to **Enabled** then any patches that are entirely filled with one color (such as gray, before anything else has been painted on the patch,) are exported as small 8x8 images to save space. Mari supports loading these 8x8 images when importing. These images are scaled up to fill the entire patch.

How to Access It

- *Menubar* | **Channels** > **Export** > any of the dropdown options
- *Menubar* | **Channels** > **Export Flattened** > any of the dropdown options
- *Menubar* | **Layers** > **Export** > any of the dropdown options
- *Menubar* | **Layers** > **Export Flattened** > any of the dropdown options
- *Right-click* | in Channels Palette > **Export** > any of the dropdown options
- *Right-click* | in Channels Palette > **Export Flattened** > any of the dropdown options
- *Right-click* | in *Layers Palette* > ***Export*** > *any of the dropdown options*
- *Right-click* | in *Layers Palette* > **Export Flattened** > *any of the dropdown options*

Export dialog box fields

Control	Type	What it does	Opens this dialog box	Notes
Named Files				
U	information	Lists the U texture coordinate for the left edge of the patch.		
V	information	Lists the V texture coordinate for the bottom edge of the patch.		
UDIM	information	Lists the UDIM number for the patch.		
File	entry box	Specify the file location to export to.		
	button	Browse to the file location you want to export the texture to.		
Small Textures	dropdown	With this option enabled, Mari exports any patches filled with a constant color as 8x8 pixel textures, no matter what resolution the patches are in Mari. Enabling **SmallTextures** saves disk space if you're exporting a channel that hasn't been fully painted. Disabling **SmallTextures** lets Mari always export patches at their full size (even if they haven't been painted).		Enabling **SmallTextures** saves disk space if you're exporting a channel that hasn't been fully painted. Disable **SmallTextures** if you want Mari to always export patches at their full size (even if they haven't been painted).
Alpha Channels	dropdown	Select **Keep** or **Remove** alpha channels when exporting textures. This can help decrease the resulting file size when exporting images that don't need alpha channels.		

Control	Type	What it does	Opens this dialog box	Notes
Sequence				
Layer	information	The name of the object, channel, and layer being exported.		
Path	entry box, dropdown	The directory to export the files to. Type the directory, select a recent directory from the dropdown, or use the navigation controls below.		
Reset To Defaults	button	Resets the path to the default location.		
	button	Goes back to the previous directory.		
	button	Goes forward to the next directory that you have browsed.		Only available if you have already browsed back via the back button.
	button	Goes up one level in the directory hierarchy.		
	button	Creates a new folder in the current directory.		
	button	Displays the contents of the directory as icons and names only.		
	button	Displays the contents of the directory as a details view, with a sort option at the top of the listing.		
Filter	entry box, dropdown	Lets you filter the image sequences displayed in the dialog box. As you enter the filter text, Mari updates the display to only show the image sequences that match your text.		

Control	Type	What it does	Opens this dialog box	Notes
Full	Image	Indicates whether the selected image sequence has a full set of images for the current model. That is, for each patch on the model, there is a corresponding image in the image sequence. Green if a full set of images is present, otherwise the number found vs number required (for example, 4/5) displays.		
Images	information	Lists the image sequences found in the selected **Path**.		
Start	information	First UDIM number in the selected image sequence.		
End	information	Last UDIM number in the selected image sequence.		
Patch Count	information	Number of image patches in the image sequence.		
Frames	Information	How many frames in the image sequence.		
Modified	information	Last modified date for the images in the sequence.		

Control	Type	What it does	Opens this dialog box	Notes
Template	entry box, dropdown	Sets the **Template** for Mari to use when gathering the names of images in the selected sequence. Variables available are: • **$ENTITY** - the name of the object • **$CHANNEL** - the name of the channel • **$LAYER** - the name of the layer • **$UDIM** - the UDIM patch value • **$FRAME** - the animation frame number • **$NUMBER** - number of the file within the batch (for example, "$NUMBER of $COUNT" gives strings like "22 of 28") • **$COUNT** - total number of files in the channel • **$[METADATA VALUE]** - any user-defined variables (for example, if a patch has a user attribute called "PROJECT", with a value of "Project1", Mari replaces the variable "$PROJECT" with "Project1").		Don't use numbers in your texture name - if you do, the Import and Export dialog boxes won't recognize the sequence.
File Example	information	Displays an example of the selected template path and filename.		
Formats	Information	Displays a list of supported export file formats.		
Use Template For	dropdown	Specifies whether the template should be used for **Only this layer** or **Everything** that is being exported.		

Control	Type	What it does	Opens this dialog box	Notes
Small Textures	dropdown	With this option **Enabled**, Mari exports any patches not yet painted on as 8x8 pixel textures (in the background color), no matter what resolution the patches are in Mari.		Enabling **SmallTextures** saves disk space if you're exporting a channel that hasn't been fully painted. Disable **SmallTextures** if you want Mari to always export patches at their full size (even if they haven't been painted).
Alpha Channels	dropdown	Select **Keep** or **Remove** alpha channels when exporting textures. This can help decrease the resulting file size when exporting images that don't need alpha channels.		
Export All Patches	button	Exports images from all patches in the project.		
Cancel	button	Cancels the export and closes the dialog box.		

54 Import Dialog

The **Import** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

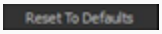
Invoked by the import channel functions and import layer functions, the **Import** dialog box lets you specify options for importing channels or layers. This can be done by importing textures into existing layer stacks, layers, or as new channels, however, importing textures as a new channel only opens the **Import** dialog box after first selecting options for the new channel from the Add Channel Dialog.

How to Access It

- *Menubar* | **Channels > Import** > any of the dropdown options
- *Menubar* | **Layers** > **Import** > any of the dropdown options
- *Right-click* | Channels Palette > **Import** > any of the dropdown options
- *Right-click* | Layers Palette > **Import** > any of the dropdown options

Import Channel Dialog Fields

Control	Type	What it does	Opens this dialog box	Notes
Named Files				
U	information	Lists the U texture coordinate for the left edge of the patch.		
V	information	Lists the V texture coordinate for the bottom edge of the patch.		

Control	Type	What it does	Opens this dialog box	Notes
UDIM	information	Lists the UDIM number for the patch.		
File	entry box	Specify the file location to import from.		
	button	Browse to the file location you want to export the texture to.		
Sequence				
Channel/Layer	information	The name of the channel or layer that is being imported.		This name is only displayed if a name has been assigned to the selected layer.
Path	entry box, dropdown	The directory containing the files to import. Type the directory, select a recent directory from the dropdown, or use the navigation controls below.		Make sure you check the path and name carefully, especially if you have been swapping between assets - Mari defaults to the last place you imported from. Don't risk overwriting your textures!
	button	Resets the path to the default location.		
	button	Goes back to the previous directory.		
	button	Goes forward to the next directory that you have browsed.		Only available if you have already browsed back using the back button.
	button	Goes up one level in the directory hierarchy.		
	button	Creates a new folder in the current directory.		

Control	Type	What it does	Opens this dialog box	Notes
	button	Displays the contents of the directory as icons and names only.		
	button	Displays the contents of the directory as a details view, with a sort option at the top of the listing.		
Filter	entry box, dropdown	Lets you filter the image sequences displayed in the dialog box. As you enter the filter text, Mari updates the display to only show the image sequences that match your text.		
Full	Image	Indicates whether the selected image sequence has a full set of images for the current model. That is, for each patch on the model, there is a corresponding image in the image sequence. Green if the selected image sequence has a full set of images for the current model, yellow if the selected image sequence has a partial set of images for the current model, or red if the selected image sequence has no images for the current model.		
Images	information	Lists the image sequences found in the selected **Path**.		
Start	information	First UDIM number in the selected image sequence.		
End	information	Last UDIM number in the selected image sequence.		
Patch Count	information	Number of image patches in the image sequence.		
Frames	information	How many frames in the image sequence.		

Control	Type	What it does	Opens this dialog box	Notes
Modified	information	Last modified date for the images in the sequence.		
Template	entry box, dropdown	Specify or select a preset format for automatically naming and numbering files on import. Variables available are: • **$ENTITY** - the name of the object • **$LAYER** - the name of the layer • **$CHANNEL** - the name of the channel • **$UDIM** - the UDIM patch value • **$FRAME** - the animation frame number • **$NUMBER** - number of the file within the batch (for example, "$NUMBER of $COUNT" gives strings like "22 of 28") • **$COUNT** - total number of files in the channel • **$[METADATA VALUE]** - any user-defined variables (for example, if a patch has a user attribute called "PROJECT", with a value of "Project1", Mari replaces the variable "$PROJECT" with "Project1").		Don't use numbers in your texture name - if you do, the **Import** and **Export** dialog boxes won't recognize the sequence.
File Example	information	Displays an example of the selected template path and filename.		
Formats	Information	Displays a list of supported import file formats.		
Import All Patches	button	Imports textures onto all patches in the project.		
Import Selected Patches	button	Appears instead of **Import All Patches** when at least one patch is selected.		
Cancel	button	Closes the dialog box without importing.		

55 Open an Image Dialog

The **Open Image** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Allows you to choose an image from somewhere on your machine or network for use in environment lighting and the **Image Manager**. Image files can be opened in Mari using this dialog, so long as they are of a valid file format, shown in the **File of type** field in the table below.

How to Access It

• *Right-click* | Image Manager Palette > **Open**

• Image Manager Palette > 

• *Right-click* | Lights Palette > **Environment** > **Image** > 

Open Image Dialog Fields

Control	Type	What it does	Opens this dialog box	Notes
Look in	dropdown	The directory containing the files to import. Select a recent directory from the dropdown, or use the navigation controls described below.		Make sure you check the path and name carefully. Mari defaults to the last place you imported from. Don't risk overwriting your textures!

Control	Type	What it does	Opens this dialog box	Notes
	button	Goes back to the previous directory.		
	button	Goes forward to the next directory that you have browsed.		Only available if you have already browsed back using the back button.
	button	Goes up one level in the directory hierarchy.		
	button	Creates a new folder in the current directory.		
	button	Displays the contents of the directory as icons and names only.		
	button	Displays the contents of the directory as a details view, with a sort option at the top of the listing.		
Name	information	Lists the name of the files or folder in the selected directory.		The files that are shown are only those that are of a valid file format.
Size	information	Lists the file or folder size.		
Kind	information	Displays what kind of file the item is, for example, a folder, a **.tiff** file, or a **.jpg** file.		
Date Modified	information	Lists the date that the file was last opened or modified.		
File name	entry box	Type a file name into the field to open the image with a specific name in the **Image Manager**.		
File of type	dropdown	Lists the file formats that are able to be opened in Mari or brought into the **Image Manager**.		

Control	Type	What it does	Opens this dialog box	Notes
Advanced Options > Color Space Conversion	dropdown	Convert the image before opening it by setting the field to **Linear to sRGB** or, if you don't want any image conversion, set it to **None**.		
Open	button	Open the image in the **Image Manager** or the environment lighting with the settings listed in the dialog.		
Cancel	button	Closes the dialog without opening any image.		

56 Mari to Maya Export Dialog

The **Mari to Maya Export** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

The **Mari To Maya Export** dialog box lets you specify the file type and destination for exporting a channel from the current Mari project to a Maya **.ma** file. Exported textures are saved to a user-selected directory and the created **.ma** file is set up to reference those texture files. The **.ma** file is created with the correct UDIM offsets for the textures so that Maya can import and apply them to the model correctly.

How to Access It

• *Menubar* | **Python** > **Examples** > **Export for Maya.**

Mari to Maya Export Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Output Folder	entry box	Displays the selected filepath for the exported files. You can also manually type in the file location.		
Browse	button	Allows you to select the file location for the exported files from the **Select Directory for Export** dialog.	**Select Directory for Export** dialog box.	
Channels	list	Displays the channel(s) for the currently selected object.		Multiple channels can be selected at once.

Control	Type	What it does	Opens this dialog box	Notes
+	button	Adds the selected channel(s) and destination directory to the **For Export** pane.		
-	button	Removes the selected channel(s) and destination directory from the **For Export** pane.		
For Export	information	Displays the channel(s) to be exported.		
8-bit Files	dropdown	Selects the bit depth of the exported images.		Available formats: **bmp, jpg, jpeg, png, ppm, psd, tga, tif, tiff, xbm,** and **xpm.**
16/32-bit Files	dropdown	Selects the bit depth of the exported images.		Available formats: **exr, psd, tif,** and **tiff.**
Force Overwrite	checkbox	Forces Mari to overwrite previously exported files to the same location, effectively replacing them.		
OK	button	Accepts the current channel export selections and exports them to the designated file location.	**Mari > Maya Progress** dialog box.	
Cancel	button	Cancels the current channel export selections and closes the **Mari To Maya Export** dialog box.		

57 New Shader Dialog

The **New Shader** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Specify what lighting shader you want to set up for your project. This does not affect your Flat, Basic, or Full lighting options, but instead impacts how the texture on your model looks under the lighting and shader components you've selected.

How to Access It

• Menubar | **Shading** > **Add SurfaceShader**

• *Button* | in Shaders Palette >  > **Choose Diffuse/Specular**

New Shader Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Diffuse				
Diffuse | **Lighting/ Diffuse/Lambertian**	dropdown	Sets the **Diffuse** component of the shader to Lambertian.		
Diffuse | **Lighting/ Diffuse/Minnaert**	dropdown	Sets the **Diffuse** component of the shader to Minnaert.		
Specular				

Control	Type	What it does	Opens this dialog box	Notes
Specular | **Lighting/ Specular/Phong**	dropdown	Sets the **Specular** component of the shader to Phong.		By default, the **Phong** shader in the **Add New Shader** dropdown menu is Lambertian/ Phong.
Specular | **Lighting/ Specular/Cook Torrance**	dropdown	Sets the **Specular** component of the shader to Cook Torrance.		By default, the **Cook Torrance** shader in the **Add New Shader** dropdown menu is Lambertian/ Cook Torrance.
Specular | **Lighting/ Specular/Beckman**	dropdown	Sets the **Specular** component of the shader to Beckman.		By default, the **Beckman** shader in the **Add New Shader** dropdown menu is Lambertian/ Beckman.
Specular | **Lighting/ Specular/Blinn**	dropdown	Sets the **Specular** component of the shader to Blinn.		By default, the **Blinn** shader in the **Add New Shader** dropdown menu is Lambertian/ Blinn.

58 Create Shader Dialog

The **Create Shader** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

The **Create Shader** dialog box allows you to create shaders that are not listed in the **Shading** menu or **Shaders** palette. These shaders are primarily those that do not use Lambertian diffuse shading. However, options for Lambertian diffuse shading are still included in the **Create Shader** dialog, so you can customize your shaders however you want.

How to Access It

- *Menubar* | **Shading** > **Add New Shader** > **Choose Diffuse and Specular**
- *Right-click* | Shaders Palette > **Choose Diffuse and Specular**
- Shaders Palette |  > **Choose Diffuse and Specular**

Create Shader dialog box fields

Control	Type	What it does	Opens this dialog box	Notes
Diffuse	dropdown	Select either Lambertian or Minnaert for Lighting/Diffuse options. Selecting either option does not limit the options you can select from the **Specular** dropdown menu.		Selecting Lambertian and a Specular options gives you the same result as the named options for **Add New Shader** on the menubar.

Control	Type	What it does	Opens this dialog box	Notes
Specular	dropdown	Select Phong, Cook-Torrance, Beckman, or Blinn for the Lighting/Specular options.		

59 Mask Channel To Alpha Dialog

The **Mask Channel to Alpha** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Creates a new channel based on the selected mask channel and source texture, with the alpha values on the new channel set by the original mask.

How to Access It

- *Menubar* | **Channel** > **Mask to Alpha**
- *Right-click* | Channel in Channels Palette > **Mask to Alpha**

Mask Channel to Alpha Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
New Channel Name	entry / dropdown	Enter the name for the new channel to create.		
RGB Channel	dropdown	Selects the existing channel that provides the diffuse color data for the new channel.		

Control	Type	What it does	Opens this dialog box	Notes
Mask Channel	dropdown	Selects the existing channel to use as the mask when creating the new channel. A second dropdown allows you to select the specific color channel to use as the mask (red, green, or blue).		

60 Select Patches By Range Dialog

The **Select Patches By Range** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Selects a range of patches according to their index or UDIM value number. Objects or scenes with many patches may benefit from being able to quickly select patches by their range value as opposed to selecting them manually from the **Patches** palette.

How to Access It

• *Menubar* | **Patches** > **Select Range**

Select Patches By Range dialog box fields

Control	Type	What it does	Opens this dialog box	Notes
Select By	dropdown	Gives you the choice of selecting a range of patches by either the UDIM value or the index value.		This is set to UDIM by default.
Value	entry box	Allows you to specify the UDIM or index values that you wish to select. You can select a range of consecutive values by listing them with a hyphen (for example, 1-5) and include non-consecutive values by separating them with a comma (for example, 1-5, 8).		

61 Add Object Settings Dialog

The **Add Object Settings** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

Specifies the settings of the imported object that is being added to the Mari project. This relates primarily to whether selected objects are merged, and how, and how the object mapping is handled.

How to Access It

- *Menubar* | **Objects** > **Add Object** > select object and **Open**
- *Right-click* | in Objects Palette > **Add Object** > select object and **Open**
- *Button* | Objects Palette >  >select object and **Open**

Add Object Settings Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Mapping Scheme	dropdown	If there is a UV map available, and you would like to use it, select **UV if available, Ptex otherwise**. If you prefer to use Ptex, select **Force Ptex**. This option loads the selected geometry and replaces the existing UV map with a Ptex map.		Only available when choosing **.obj** or **.abc** files in the file browser.

Control	Type	What it does	Opens this dialog box	Notes
Selection Sets	dropdown	Selection sets have two options, to either: • **Create From Face Groups** - this is the default behavior and allows the use of selection sets in Mari. • **Don't Create** - if you choose not to create a selection set, Mari does not create any from the file.		Only available when choosing **.obj** files in the file browser.
Multiple Geometries Per Object	dropdown	If your **.obj** consists of multiple geometries, you have the option to **Merge Geometries Into One**, which is the default behavior, or **Create Separate Geometries (Ptex Only)**. If you select **Merge Geometries Into One**, Mari combines the individual geometries into a single geometry, while selecting **Create Separate Geometries (Ptex Only)** creates individual geometries.		Only available when choosing **.obj** files in the file browser. Even if you select **Create Separate Geometries (Ptex Only)**, Mari only displays a single geometry on the canvas. However, when you export a channel you have the option to export individual **.ptx** files for each geometry.
Process each geometry file as a	dropdown	For Ptex files, there are two choices for the geometry mesh options: • **Separate Object** - creates only one object with one geometry. • **Separate Geometry In One Object** - creates only one object, but has multiple geometries within it.		Only available when choosing **.ptx** files in the file browser. The option to **Separate Geometry In One Object** is essentially the inverse of the Ptex channel export process, and allows project reconstruction.

Control	Type	What it does	Opens this dialog box	Notes
Merge Type	dropdown	Choose whether to merge selected items from the object hierarchy tree as: • **Single Mesh** - merges selected geometry into one single mesh in a GeoEntity. Note that this implies that the information about the original geometries cannot be accessed once the merge is done. • **Just Merge Nodes** - merges selected geometry into one GeoEntity while retaining the metadata and mesh information about the original individual geometries. Note, this information can only be accessed by more technical users using the C API.		Only available when choosing **.abc** files in the file browser.
Scene	information	In the object hierarchy, shows all the objects, cameras, and lights that are part of the Alembic file.		Only available when choosing **.abc** files in the file browser.
Merge	checkbox	Select the checkbox to determine if a geometry is to be merged with another on project creation.		Only available when choosing **.abc** files in the file browser. For more information on merging Alembic geometry, see *Create New Project* under the *Alembic* chapter in the *Mari User Guide*.
Start Frame and **End Frame**	entry box	Set the frame range from the source file to import.		Only available when choosing **.obj** and **.abc** file sequences in the file browser.
Single Frame	button	Sets the start and end frame fields to only import the first frame from the animation in the object file.		Only available when choosing **.obj** and **.abc** file sequences in the file browser.

Control	Type	What it does	Opens this dialog box	Notes
All Frames	button	Sets the start and end frame fields to import the entire animation from the object file.		Only available when choosing **.obj** and **.abc** file sequences in the file browser.
Frame Offset	entry box	Set by how many frames to offset the loading of an animated object. You can specify a frame range, or simply a number of frames.		Only available when choosing **.abc** files in the file browser.
Ok	button	Accepts the object settings and imports the selected objects.		
Cancel	button	Cancels the object import and closes the **Add Object Settings** dialog.		

62 Add Version Settings Dialog

The **Add Version Settings** dialog is described below with functions for how to access it. A list of the controls on the dialog box can be found in the table below.

What It Does

Specifies the settings of the imported object version that is being added to the Mari project.

How to Access It

• *Right-click* | on object in Objects Palette > **Add Version** > select object and **Open**

Add Version Settings Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Mapping Scheme	dropdown	If there is a UV map available, and you would like to use it, select **UV if available, Ptex otherwise**. If you prefer to use Ptex, select **Force Ptex**. This option loads the selected geometry and replaces the existing UV map with a Ptex map.		

Control	Type	What it does	Opens this dialog box	Notes
Merge Type	dropdown	Choose whether to merge selected items from the object hierarchy tree as: • **Single Mesh** - merges selected geometry into one single mesh in a GeoEntity. Note that this implies that the information about the original geometries cannot be accessed once the merge is done. • **Just Merge Nodes** - merges selected geometry into one GeoEntity while retaining the metadata and mesh information about the original individual geometries. Note, this information can only be accessed by more technical users using the C API.		
Scene	information	In the object hierarchy, shows all the objects, cameras, and lights that are part of the Alembic file.		
Merge	checkbox	Select the checkbox to determine if a geometry is to be merged with another on project creation.		For more information on merging Alembic geometry, see *Create New Project* under the *Alembic* chapter in the *Mari User Guide*.
Start Frame and **End Frame**	entry box	Set the frame range from the source file to import.		
Single Frame	button	Sets the start and end frame fields to only import the first frame from the animation in the object file.		
All Frames	button	Sets the start and end frame fields to import the entire animation from the object file.		

Control	Type	What it does	Opens this dialog box	Notes
Frame Offset	entry box	Set by how many frames to offset the loading of an animated object. You can specify a frame range, or simply a number of frames.		
Ok	button	Accepts the object settings and imports the selected object versions.		
Cancel	button	Cancels the object import and closes the **Add Version Settings** dialog.		

63 Load Camera Dialog

The **Load Camera** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

The **Load Camera** dialog box comes up whenever you attempt to load or import a camera from outside the current Mari project. The camera file types are **.fbx** only.

How to Access It

• *Menubar* | **Camera** > **Load Camera**

Load Camera dialog box fields

Control	Type	What it does	Opens this dialog box	Notes
Look in	entry box, dropdown	The directory of the camera file that is to be loaded into the current project.		
	button	Goes back to the previous directory.		
	button	Goes forward to the next directory that you have browsed.		Only available if you have already browsed back via the back button.
	button	Goes up one level in the directory hierarchy.		

Control	Type	What it does	Opens this dialog box	Notes
	button	Creates a new folder in the current directory.		
	button	Displays the contents of the directory as icons and names only.		
	button	Displays the contents of the directory as a details view, with a sort option at the top of the listing.		
File Name	entry box	Displays the name of the selected file to be imported into the project.		This field is automatically filled in when a file is selected from the above directory location.
File Type	entry box, dropdown	Displays the file formats available to import the selected file.		By default this should display **.fbx** or **.FBX**.

64 Manage Toolbar Dialog

The **Manage Toolbar** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you add, edit and remove toolbars for quick access to Mari functions.

Click **Add** to add a new toolbar, **Remove** to remove the selected toolbar. Drag icons for actions listed to and from existing toolbars.

How to Access It

Menubar | **Edit** > **Toolbars**

Manage Toolbars Dialog Box Fields

Control	Type	What it does	Opens this dialog box	Notes
Search Actions	entry box, dropdown	Search for actions in the list below to quickly find a particular action shortcut or information.		
	button	Clear the search bar for the **Search Actions** field.		
	button	Go back to the previous search result.		

Control	Type	What it does	Opens this dialog box	Notes
	button	If on a previous result, go forward to the next search result.		
	button	Reset all shortcuts to their default entries.		
	button	Import custom shortcuts from outside Mari.		
	button	Export custom shortcuts to an external source.		
Lookup Shortcut	entry box	Enter the shortcut to look up what action the shortcut is set to.		
(actions) | **Name**	information	The name of the action.		
(actions) | **Description**	information	A brief description of the action.		
(actions) | **Shortcut**	information, entry	Displays assigned keyboard shortcuts.		
(toolbars) | **Visible**	checkbox	Whether the action is currently displayed.		Grouped by Default (the standard toolbars that come with Mari) and Custom (user-added toolbars).
(toolbars) | **Add**	button	Add a new toolbar.	Make New Toolbar	Opens a dialog box to name the new toolbar.
(toolbars) | **Remove**	button	Remove selected custom toolbar.		

65 Manage Keyboard Shortcuts Dialog

The **Manage Keyboard Shortcuts** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you add, edit and remove keyboard shortcuts for quick access to Mari functions.

Click in the **Shortcut** column and type the keyboard shortcut for a function. A 'collision' icon displays if that shortcut has already been assigned to another function.

How to Access It

Menubar | **Edit** > **Shortcuts**

Edit Shortcuts dialog box fields

Column	Type	What it does	Notes
Search Actions	entry box, dropdown	Search for actions in the list below to quickly find a particular action shortcut or information.	
	button	Clear the search bar for the **Search Actions** field.	
	button	Go back to the previous search result.	

Column	Type	What it does	Notes
	button	If on a previous result, go forward to the next search result.	
	button	Reset all shortcuts to their default entries.	
	button	Import custom shortcuts from outside Mari.	
	button	Export custom shortcuts to an external source.	
Lookup Shortcut	entry box	Enter the shortcut to look up what action the shortcut is set to.	
(actions) | **Name**	information	The name of the action.	
(actions) | **Description**	information	A brief description of the action.	
(actions) | **Shortcut**	information	Displays assigned keyboard shortcuts. Click and type over new shortcuts.	

66 HUD Manager Dialog

The **HUD Manager** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you select what appears on the "Head Up Display" (HUD) that shows information about Mari and the current project in the top left-hand corner of the canvas. For each piece of information, the **HUD Manager** shows its:

- **Name** - displayed hierarchically.
- **Type** - QString, int, bool, qint64, float, PaintSelectedMarkFlag, MriColor, PaintOnFlag, DisplayQuality, MriGradient, LightingMode, Qdate, MriFileList, Background, MriPaintMode.
- **HUD** - a checkbox for whether to include in the HUD.
- **Control** - this is debug information, and can be ignored.

How to Access It

Menubar | **Edit** > **HUD Manager**

HUD Manager Dialog Box Fields

Control	Type	What it does	Notes
Shader Network GLSL Code Generator Manager > *General*	**GLSL Generator**	QString	Shows the GLSL for the shader network.	
Project > Data | Texture Image Count	int	Shows the number of texture images (patches) present.	
Project > Data | Total Image Count	int	Shows the total number of images present.	

Control	Type	What it does	Notes
Project > Data | Image Tile Count	int	Shows the total number of image tiles present.	
Project > Data | DDI Hash Count	int	Debug info.	
Project > Project | **Current Modular Shader**	QString	Shows the name of the current shader network.	
Project > Project | **Current Object**	QString	Shows the name of the object currently selected.	
Project >Project | **Current ImageSet**	QString	Shows the name of the image set currently selected.	
Canvas > Rendering | **Deferred Texture Array**	bool	Debug info.	
Canvas > Rendering | **Deferred Shading**	bool	Debug info.	
Canvas > Rendering | **Selected Patches**	int	Shows the number of patches currently selected.	
Canvas > Rendering | **Triangles**	int	Shows the number of triangles on the model.	
Canvas >Rendering | **Current Uniforms**	int	Shows the number of GLSL uniforms for the currently selected shader.	
Canvas >Rendering | **Uniforms**	int	Shows the maximum number of GLSL uniforms used to draw the canvas.	
Canvas > Rendering | **FPS**	float	Shows the current Frames Per Second of the display. This shows how fast the display is rendering, and how smoothly movement displays.	
Canvas > Rendering | **FPAnim**	int	Shows the number of frames per animation.	
Tool Manager > General | **Tool Help**	QString	Shows basic tool help for the current tool.	
Tool Manager > General | **Current Tool**	QString	Shows the name of the current tool.	
GPU 0 > Capabilities | **Global Cubemap Seams Allowed**	bool	Debug info.	

Control	Type	What it does	Notes
GPU 0 > *Capabilities*	**Threaded OpenGL Operations Allowed**	bool	Debug info.	
GPU 0 > *Capabilities*	**Tessellation Allowed**	bool	Debug info.	
GPU 0 > *Capabilities*	**Geometry Shaders Supported**	bool	Debug info.	
GPU 0 > *Capabilities*	**Offscreen AA**	bool	Debug info.	
GPU 0 > *Capabilities*	**Float Data**	bool	Debug info.	
GPU 0 > *Capabilities*	**Offscreen**	bool	Debug info.	
GPU 0 > *Capabilities*	**Shaders**	bool	Debug info.	
GPU 0 > *Capabilities*	**Max Texture Size**	int	Debug info.	
GPU 0 > *Capabilities*	**Texture Units**	int	Debug info.	
GPU 0 > *Driver*	**Renderer**	QString	Debug info.	
GPU 0 > *Driver*	**Glew**	QString	Debug info.	
GPU 0 > *Driver*	**Version**	QString	Debug info.	
GPU 0 > *Driver*	**Vendor**	QString	Debug info.	
GPU 0 >*Resources*	**Max Uniforms**	QString	Debug info.	
GPU 0 > *Resources*	**Memory Info**	QString	Shows the memory usage and free memory information for the project.	
GPU 0 > *Resources*| **Used Texture Units**	int	The number of texture units used in the project.	
GPU 0 > *Resources*	**Free Offsceen**	int	Debug info.	
GPU 0 > *Resources*	**Offscreen Buffers**	int	Debug info.	

Control	Type	What it does	Notes
GPU 0 > *Resources* | **GPU Ram**	qint64	Debug info.	
GPU 0 > *Resources* | **Max Image Memory**	qint64	Debug info.	
GPU 0 > *Resources* | **Buffer Memory**	qint64	Debug info.	
GPU 0 > *Resources* | **Tile Memory**	qint64	Debug info.	
GPU 0 > *Resources* | **Image Tiles**	int	Debug info.	
Channels | **Current Channel Path**	QString	Show the path of the currently selected channel.	
Channels | **Current Channel**	QString	Shows the name of the current channel on the current object.	
Clock | **Animation Frame**	int	The number of the frame currently being displayed.	
Clock | **Animation Frame**	int	The frame number currently displayed, if applicable.	
Clock | **Animation Loop**	int	The number of frames currently being looped.	
Clock | **Animation FPS**	int	Frames Per Second of the animation.	
Clock | **Animation Time**	QString	Time length of the animation in the scene.	
Layers | **Current Layer Path**	QString	Shows the path of the currently selected layer.	
Layers | **Current Layer**	QString	Shows the name of the current layer in the current channel and object.	
Shaders | **Current Shader**	QString	Shows the name of the shader currently selected.	
<Project> > *General* | **Description**	QString	Shows description of current project.	
<Project> > *Creation* | **Created By**	QString	Displays the login name of the user who originally created the project.	
<Project> > *Creation* | **Creation Date**	QDate	Displays the initial creation date of the project.	

Control	Type	What it does	Notes
<Project> > Debug | **Unique ID**	QString	Debug info.	
<Project> > Editing | **Last Edited**	QDate	Displays date that the project was last edited.	
<Project> > Editing | **Last Editor**	QString	Displays user who last edited the project.	
<Project> > Geometry | **Mesh Creator**	QString	Displays the user who created the geometry file upon which the project is based.	
<Project> > Geometry | **Mesh Created**	QString	Displays the date and time that the geometry file was created.	
<Project> > Geometry | **Mesh Path**	QString	Displays the path for the mesh file.	

67 Mari Preferences Dialog

The **Mari Preferences** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Lets you set preferences for how Mari works.

How to Access It

Menubar | **Edit** > **Preferences**

Mari Preferences Dialog Box Fields

Setting	Type	What it does	Notes
Color			
Color Management Defaults	**Color Picker Maximum**	entry box, slider	The maximum color intensity that can be chosen in the color picker.	From 1 to 65,365; defaults to 4,096.
Color Management Defaults	**Enabled**	checkbox	Sets whether color management is enabled by default.	
Color Management Defaults	**Color Profile**	dropdown	Sets the default color profile for displaying colors on your monitor.	
Display Defaults	**Configuration File**	entry box, button	Specifies the default colorspace configuration file that is loaded by the colorspace toolbar.	

Setting	Type	What it does	Notes
Display Defaults | **Input ColorSpace**	dropdown	Sets the default colorspace of the scene.	
Display Defaults | **Display**	dropdown	Sets the default colorspace for the display device used to view the scene.	
Display Defaults | **View**	dropdown	Sets the default display transform applied to the scene.	
Display Defaults | **Component**	dropdown	Sets the default color component displayed for the scene.	
Display Defaults | **Gain**	entry box, slider	Sets the default amount of exposure adjustment that is applied before the display transform.	
Display Defaults | **Gamma**	entry box, slider	Sets the default amount of gamma correction that is applied after the display transform.	
Display Defaults | **LUT Size**	dropdown	Sets the size of the display LUT loaded by the colorspace toolbar.	You may sometimes notice artifacts on the canvas when your LUT size is too small. Increase the size of the LUT here.
Display General | **Center F-Stop**	entry box, slider	Sets the center F-Stop value for when the Gain reset button is clicked.	
LUT Defaults | **File**	entry box, button	Sets the location of the default LUT file that is loaded by the colorspace toolbar.	
LUT Defaults | **Extrapolate**	checkbox	Sets whether extrapolation is enabled by default. If enabled, the GPU extrapolates the grid values or clamps to the maximum value of the LUT.	

Setting	Type	What it does	Notes
Data			
Autosave | **Autosave Frequency (Mins)**	entry box, incrementers	Sets how frequently (in minutes) Mari automatically saves your work.	
Cache | **Thread Count**	entry box, slider	Sets the number of free threads that are available for background tasks.	These are in addition to the dedicated data management threads (of which there are three per cache directory).
Cache | **Max Memory**	entry box, incrementers	Sets the maximum amount of memory Mari uses for the DDI cache blocks. You can't set this to a value higher than 80% of the memory you have available (rounded to the nearest half-GB). For example, if you have 6GB of memory available, you can't set **Max Memory** to a value higher than 4.5GB. This is to avoid using all the physical memory available.	DDI is the data caching system used in Mari. The **Reset** (**R**) icon resets the maximum memory value to 2 GB.
Cache | **Check Drive Space**	entry box, slider	Sets the interval, in seconds, that the cache drives are checked for sufficient disk space.	
Channel Cache | **Resolution Mode**	dropdown	Determines if Mari caches at the given channel's resolution or a lower proxy level. Setting this to **Fixed** uses the **Default resolution** and **Type** listed below.	This can speed up the caching process if you don't require the full resolution of the channel to be cached.
Channel Cache | **Default Resolution**	dropdown	If the **Resolution Mode** is set to **Fixed**, Mari caches at the selected resolution.	This can save time when caching large patches if you don't require the full resolution while working.

Setting	Type	What it does	Notes
Channel Cache | **Default Type**	dropdown	If the **Resolution Mode** is set to **Fixed**, Mari caches at the selected bit depth.	This can save time when caching large patches if you don't require the full resolution while working.
Channels | **Importer**	dropdown	Sets the mode for the import function. One of: • **Fast Importer** - takes over your Mari session while it imports the textures, but works quicker. • **Background Importer** - works in the background, letting you paint and work on your project, but takes longer.	
Channels | **Exporter**	dropdown	Sets the mode for the export function. One of: • **Fast Exporter** - takes over your Mari session while it exports the textures, but works quicker. • **Background Exporter** - works in the background, letting you paint and work on your project, but takes longer.	
Channels | **Export Mask Stacks**	dropdown	Determines how mask stacks are exported. Either: • **Export Baked Mask Stack and an Invisible Group** - exports a group along with the mask stack in order to group the exported masks. • **Export Baked Mask Stack Only** - exports on the mask stack with nothing else as part of the export.	

Setting	Type	What it does	Notes
Channels | **Autosnapshot**	dropdown	Sets whether automatic snapshots are enabled or disabled. The options available are: • **Disabled** - Disables the Autosnapshot feature. • **Enabled with Limi**t - Enables the Autosnapshot feature but limits the number of autosnapshots that can be stored in the Snapshots palette. • **Enabled - Unlimited** - Enables the **Autosnapshot** feature without a limit on the number of autosnapshots that can be stored in the **Snapshots** palette.	
Channels | **Autosnapshot Limit**	entry box, slider	When **Enabled with Limit** is selected, Mari limits the number of automatic snapshots that are stored in the **Snapshots** palette to the number specified by the **Autosnapshot Limit**. The maximum value is 20.	
General | **Fix Edge UVs**	dropdown	Sets whether Mari should "fix" any UVs that sit on the edge of the patch. With this on, you can paint models that have UVs at the edge of the patch.	
General | **Channel Input**	dropdown	When creating a new project, sets whether the **New Channel** dialog box adds either: • **Single Channel** - a single channel. • **Channel Presets** - a set of channels that you select from a list of presets.	
GPU			

Setting	Type	What it does	Notes
Baking and Projection | **Max Tile Size for Tiled Renderers**	dropdown	Sets the maximum tile size for tiled render operations (for example, unprojections). Setting this to a lower value improves accuracy but may result in slower render operations.	
Baking and Projection | **Max Render Size for Baking**	dropdown	If baking calculation has to be divided into sections in order to continue efficiently, this specifies the maximum square size of these sections.	Increasing the number of squares per section can increase baking time, but may impact stability.
Canvas | **Deferred Shading**	checkbox	Specifies whether to use deferred shading. This is on by default and should increase painting and navigation speed.	
Canvas | **Deferred Texture Array**	checkbox	Turns **Deferred Texture Array** on/off. When this is active, Mari makes more efficient use of OpenGL.	
Depth Projection | **Allow Depth Projections**	checkbox	Allows the use of shadow rendering in Mari. If the box is ticked, shadow-related features are available in the **Lights** and **Objects** palettes. By default, this preference is disabled.	Depending on your hardware and project requirements, shadow processing may cause a noticeable drop in UI responsiveness. Disabling this option disables shadow processing entirely and improves rendering throughput.

Setting	Type	What it does	Notes
Depth Projection | **Use Variance Maths**	checkbox	Sets whether variance map maths are used for shadows. If this box is ticked, the boundary of the shadows are softer and less prone to aliasing. For a sharper edge to shadows, unselect this box.	If **Allow Depth Projections** is unselected, shadows do not display. The **Use Variance Maths** checkbox should be unselected as it depends on shadows being used.
Depth Projection | **Depth Projection Resolution**	dropdown	Sets the texture resolution of each of the array of depth textures used for shadow rendering. The **Depth Projection Texture Array Size** is linked to this resolution and impacts other resolution sizes set in Mari.	
Depth Projection | **Depth Projection Texture Array Size**	dropdown	Sets the number of depth projection textures to use for shadow rendering. Increasing the array size increases the graphics card memory made available for shadow rendering. The total graphics memory used for these textures is 8 multiplied by the depth projection resolution, multiplied by the depth projection texture array size. The array size controls how many angles each light of the 4 lights uses. The maximum array size is 24, which allows for 6 angles per light.	Options are available for 25-32, but at this time Mari does not use these additional angles. Selecting options over 24 causes wasted cache space.
General | **Max Image Memory**	entry box, incrementers	Sets the maximum amount of additional GPU memory Mari uses for tasks other than painting, for example, filter operations.	

Setting	Type	What it does	Notes
General | **Deferred Quad Split Count**	entry box, slider	Sets the quad split count. Increasing this value splits the canvas into smaller parts.	Used in conjunction with **Draw Batch Size**, adjusting this value can improve stability and prevent Windows driver resets.
General | **Threaded OpenGL Operations Allowed**	checkbox	If this is enabled then operations requiring threaded OpenGL can be executed.	
General | **Tessellation Allowed**		Enables the use of tessellation shaders for hardware able to support them.	
General | **VSync**	dropdown	Sets the VSync option to **Off**, **On**, or **System**. If the VSync option is **On**, then this forces the main canvas to only update at the monitor's refresh rate. If it is **Off**, then the main canvas can update at any time. This could result in tearing, if the canvas is running faster than the monitor's refresh rate. If the option for **System** is set, Mari uses the system and driver settings for VSync. mari needs to be restarted for this to fully take effect.	This setting is dependent on driver and operating system settings. Hence, this option doesn't appear if you do not have the correct OS or drivers.
Virtual Texture | **Virtual Texture Type**	dropdown	Sets the pixel type of the virtual texture that Mari uses. Setting this to **Half** or **Float** gives more precision when painting or previewing displacement but requires significantly more GPU memory.	

Setting	Type	What it does	Notes
Virtual Texture | **Virtual Texture Size**	dropdown	Sets the size of the virtual textures Mari uses. Larger sizes may give better results but require significantly more GPU memory.	
Virtual Texture | **Virtual Texture Size for Paint Bake**	dropdown	Controls the size of the virtual texture being used for the display. Increasing this setting may resolve issues, such as flickering, but takes up more memory.	This is a graphics card-dependant setting.
Virtual Texture | **Gather Scale**	entry box, slider	Sets the buffer size Mari uses when gathering information on which image tiles are required for rendering a scene. The default value of 1.000 halves the canvas resolution and works well in most situations, saving processing time. However, if glitches are appearing in the canvas, you may need to increase this value to fix the problem (at the cost of reduced painting and navigation speed).	
Virtual Texture | **Thin Triangle Preview Quality**	entry box, slider	Controls the texture preview quality of thin triangles. The default value is 0. In cases where the geometry has long thin triangles, increasing this value results in the use of higher resolution textures.	
Misc			
Appearance | **Use Custom Font Size**	checkbox	Enabling this allows you to change the font used in Mari from the default setting.	
Appearance | **Custom Font Size**	entry box, slider	Adjusts point size of the custom font.	**Use Custom Font** must be enabled in order for this to have an affect.

Setting	Type	What it does	Notes
Image Import/Export | **Show Summary Dialog on Import**	checkbox	Sets whether Mari displays an import summary dialog after importing an image.	The import summary dialog displays information such as how many images were imported, how long the operation took, and if patches were resized - then how many.
Image Import/Export | **Remember Import and Export Paths**	checkbox	If enabled, Mari automatically remembers paths previously set for importing and exporting, and offers them again next time you attempt to import or export.	
Input | **Use HiRes Positions**	checkbox	If this option is enabled, Mari uses high resolution position values from tablets and other devices. Most often this is only noticeable using **Paint** and **Vector Paint** on large patch sizes.	In some cases, having this option enabled can hinder painting entirely. Disabling it resolves the issue.
NamedFiles | **Patch Cutoff**	entry box, slider	Sets the maximum number of patches objects are allowed to have for the **Named Files** tab to appear on the **Import** and **Export Channel** dialogs. You can override this setting using the MARI_NAMEDFILEIMPORT_SEQUENCELIMIT environment variable. You can use the **Named Files** tab to import or export individual files rather than a sequence of patches with the UDIM number (1001, 1002, etc.) in the file names.	

Setting	Type	What it does	Notes
Scene | **Default Lights Fixed To**	dropdown	Sets whether the lights are fixed to a camera or scene by default.	
Shelf | **Show Overlay**	checkbox	Specifies whether to show object information over the items within shelves (for example, color values for color swatches).	
Shelf | **Show Overlay**	checkbox	Specifies whether to show item labels in shelves (for example, names for color swatches).	
Shelf | **Shelves Include Presets**	checkbox	Specifies whether to show Mari's preset brushes in the Shelf tab. If off, only your personal and custom shelves are displayed.	
Shelf | **Remake Icons**	button	Regenerates Mari's icons for shelf items. If these have become corrupt (for example, if your brush icons are all blank), clicking this forces Mari to re-create all the icons.	
Slider Precision | **Slider Precision**	slider	Adjusts how many decimal places are represented by Mari's sliders. Increasing this gives you finer control over slider values.	

Setting	Type	What it does	Notes
ToggleTools | **Tool on Key Held**	checkbox	Sets how the shortcut keys for the **Zoom Paint Buffer** (**Z**), **Color Picker** (**C**), and **Select** (**S**) tools work. If **On**, these shortcut keys only apply while you're holding them down. Mari switches back to your previous tool when you let go of the shortcut key. If this is **Off**, tapping the shortcut key quickly switches permanently to the tool, and holding it down for more than a second or two switches to the tool while you're holding the shortcut key (and switches back as soon as you let it go).	
Usage Statistics | **Send Statistics**	checkbox	Allows Mari to send usage data to The Foundry.	All information is sent anonymously.
Navigation			
General | **Momentum Enabled**	checkbox	If this is enabled, the model has momentum, so when you let go of the mouse button, it slowly coasts to a stop. If this is disabled, the model only moves when you are holding the mouse button down.	
General | **Minimum Flick Speed**	entry box, slider	Sets the minimum speed at which you can move your model around. The higher this is set, the more sensitive the movement controls are.	

Setting	Type	What it does	Notes
General | **Friction**	entry box, slider	Affects the momentum of your model as you move it around the canvas.	Decreasing this value allows movement to retain its momentum for longer. Increasing the value arrests momentum faster.
General | **Control Type**	dropdown	Sets up the Mari controls on the canvas to match the controls of another application, specified in the dropdown list. Applications include: Nuke, Maya, LightWave, and Houdini.	
Orbit | **Lock To World Up**	checkbox	If this is on, it locks the y axis to world up view.	
Orbit | **Center Mode**	dropdown	Specify the center point to orbit around from the choice of: • **Look At** - what is currently being viewed in the display. • **Objects** - the objects in a scene. • **Origin** - the scene origin point. • **Selection** - the current selection.	
Roll | **Circular Motion Enabled**	checkbox	If enabled, rolling is achieved by making a circular motion in the center of the canvas. If this option is disabled, rolling is only done with a horizontal motion across the canvas.	
Nuke			
General | **Use flat lighting**	checkbox, reset	Modifies the Nuke workflow to use flat lighting.	The reset icon resets the flat lighting option back to default.
Server | **Nuke host**	entry box, reset	Allows you to specify the host name for the location of Nuke.	

Setting	Type	What it does	Notes
Server | **Port**	entry box, slider, reset	Allows you to specify the port number, or modify it with the slider.	
Server | **Nuke launch path**	entry box	Allows you to browse and load a launch path for accessing Nuke files.	The path can be written manually or inserted using the browse and load icon.
OpenCL			
Graphics Card | **Use Device**	dropdown	Select whether to **Use** the graphics card listed to perform OpenCL-accelerated operations, or set it to **Disabled**, so that Mari does not use the device. If you have OpenCL issues while running Mari, try disabling this device.	This preference is available on Mac only.
Graphics Card | **Device Vendor**	information	Displays the vendor (company) name of the graphics card listed above.	This preference is available on Mac only.
Graphics Card | **Driver Version**	information	Displays the driver version of the graphics card listed above.	This preference is available on Mac only.
CPU | **Use Device**	dropdown	Select whether to **Use** the CPU listed to perform OpenCL-accelerated operations, or set it to **Disabled**, so that Mari does not use the device. If you have OpenCL issues while running Mari, try disabling this device.	This preference is available on Mac only.
CPU | **Device Vendor**	information	Displays the vendor (company) name of the CPU listed above.	This preference is available on Mac only.
CPU | **Driver Version**	information	Displays the driver version of the CPU listed above.	This preference is available on Mac only.
Painting			

Setting	Type	What it does	Notes
Cursor | **Shape**	dropdown	Allows you to set whether the brush cursor in Mari is displayed as an outline of the selected brush tip or as a standard round paint cursor.	
Cursor | **Opacity**	entry box, slider	Allows you to set the opacity of the brush cursor. This only affects how opaque the cursor design is, not the opacity of the paint.	
Projection | **Default Color Depth**	dropdown	Sets the default color depth Mari uses: 8, 16, or 32-bit.	
Paths			
Channel Presets | **Search Paths**	list, button	Adds or removes directories that Mari checks for channel preset configuration files.	See the *Mari User Guide* for details on writing your own channel preset files.
Environments | **HDR Paths**	list, button	Adds or removes directories that Mari checks for environment light images. For each directory provided, a Thumbnails sub-directory within it is looked for that should contain smaller versions of the images, with matching filenames, for use by the UI.	When Mari scans the path, it also searches for image thumbnails to use from the **Thumbnails** directory.
Shaders | **Search Paths**	list, button	Adds or removes directories that Mari checks for compositing shaders.	
Ptex			

Setting	Type	What it does	Notes
Face Textures | **Minimum Size**	dropdown	Sets the minimum face texture size. The options provide increments in powers of two, and allow you to clamp face texture sizes during project creation and face resizing.	The default state is 1 for quadrangular textures, and 2 for triangular textures.
Scripts			
Console | **Font Size**	entry box, slider	The point size of the default Mari font in the Python console.	
Mari Command Port | **Port**	entry box, slider	Sets the port number that Mari receives commands from Nuke through. The default value is 6100.	
Mari Command Port | **Enabled**	checkbox	If checked, Mari can receive commands through the specified port.	The default state is disabled.
Mari Command Port | **Local Host Only**	checkbox	If unchecked, Mari can listen for connections to its command port from any machine. If this is checked, then Mari only listens for connections from the local machine. Only allowing connections from the local host is more secure but prevents you from using features, such as the Nuke<>Mari Bridge.	The default state is enabled.

68 Display Properties Dialog

The **Display Properties** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Allows you to set how Mari displays the project - the background behind the model, the overlay used on locked patches, whether to show wireframes on the model, and so on.

How to Access It

Right-click | main canvas > **Display Properties**

Display Properties Dialog Box Fields

Control	Type	What it does	Notes
Canvas > HUD	**HUD**	checkbox	Shows the Heads Up Display information in the background of the canvas (tool tips, etc).	
Canvas > Background	**Image**	entry box, button	Select the file to display as the project background in the canvas. If not set, the colors in the **Bottom** and **Top** fields are used for the background.	
Canvas > Background	**Bottom**	swatch	Sets the color to display at the bottom of the screen. To use a single color in the background, set both the **Bottom** and **Top** to the same value.	

Control	Type	What it does	Notes
Canvas > Background	**Top**	swatch	Sets the color to display at the top of the screen.	
Canvas > Environment	**Show Environment**	checkbox	If an **Environment** light image is set to display as a background on the canvas, this control applies as a global setting for the canvas so that it can be turned on or off separately.	
Canvas > Grid	**Color**	swatch	Sets the color for the onscreen reference grid.	
Canvas > Grid	**Size**	entry box	How large (in squares) the onscreen reference grid is.	
Canvas > Grid	**Visible**	checkbox	Shows the reference grid in the background of the onscreen display.	This does not affect the UV view.
Canvas > Wireframe	**Color**	swatch	The color of the wires displayed in the wireframe overlay.	
Canvas > Wireframe	**Visible**	checkbox	If this is selected, the model in the 3D views are displayed with the wireframe visible on top of the paint.	
Canvas > Camera Mask	**Opacity**	entry box, slider	The opacity of the black bars that indicate the aspect ratio of the perspective camera in the Canvas.	By default, this is set to 0, which means the bars are disabled.
Canvas > *Linked Patches*	**Color**	swatch	The color of the patches that are linked together.	
Canvas > *Rendering*	**Checker Color A**	swatch	Sets color A of the transparency checkerboard. This can be selected using the color picker.	
Canvas > *Rendering*	**Checker Color B**	swatch	Sets color B of the transparency checkerboard. This can be selected using the color picker.	

Control	Type	What it does	Notes
Canvas > *Rendering*	**Checker Size**	entry box, slider	The size of the individual checkerboard squares. This can be adjusted using either the slider or the entry box.	By default this is set to 10.
Canvas > *Rendering*	**Render Camera**	checkbox	Show the cameras on the canvas.	
Canvas > *Rendering*	**Render Light**	checkbox	Show the lights on the canvas.	
Canvas > *Rendering*	**Render UV Image**	checkbox	Show the patches in the UV view as they appear after export, including the overspill areas.	
Canvas > *UV Label*	**Text Color**	swatch	The color for the onscreen text on the UV view, used to show the UV patch information.	Only visible if you have opened the dialog box from within the UV view.
Canvas > *UV Label*	**Visible**	checkbox	Whether to show the onscreen UV patch information text over each patch in the UV view.	Only visible if you have opened the dialog box from within the UV view.
Canvas > *Selection*	**Fill Render**	dropdown	When to show the selection fill color. This appears in the middle of selected areas. Options are: • **Select** - show the selection fill while the area is being selected. Once you've finished making the selection, the fill disappears. • **Always** - show the selection fill the whole time the area is selected. • **Never** - do not show the selection fill.	
Canvas > *Selection*	**Fill Color**	swatch	The color to use to fill selected areas. Click on the swatch to set the color.	

Control	Type	What it does	Notes
Canvas > *Selection* | **Outline Render**	dropdown	When to show the selection outline. This appears around the outside of selected areas. The options are the same as for **Fill Render**, above.	
Canvas > *Selection* | **Outline Color**	swatch	The color to use to outline the selected areas. Click on the swatch to set the color.	

69 Screenshot Settings Dialog

The **Screenshot Settings** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Allows you to specify the settings for any screenshots that you take of the Mari canvas. If these settings have never been adjusted before, the dialog appears the first time you attempt to take a screenshot from the **View** menu. However, you can change these settings at any time.

How to Access It

Menubar | **View** > **Screenshot Settings**

Screenshot Settings dialog box fields

Control	Type	What it does	Opens this dialog box	Notes
Output	entry box, dropdown	The directory where the screenshots are to be saved. Type the directory or click the file browser button to navigate to it directly.		
	button	Browse to the directory where you want the screenshots to be saved.		
Incremental	dropdown	If **Enabled**, multiple screenshots are saved with incremental numbers appended to the filename. If **Disabled**, every screenshot overwrites the previous one.		

Control	Type	What it does	Opens this dialog box	Notes
Background	dropdown	Sets whether the background of the screenshot is **Gray** or **Transparent**.		

70 Render Turntable Dialog

The **Render Turntable** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Takes the scene as you can see it through the selected shader, and creates a series of images showing the model rotating through an axis. The axis of rotation is a vertical line through the current camera view, centered in the middle of the visible portion of the model. You can include custom text or thumbnails of reference images in the turntable.

How to Access It

Right-click | Projector in Projectors Palette >  **Render Turntable**

Render Turntable Dialog Box Fields

Control	Type	What it does	Notes
Settings	**Size**	dropdown	Selects the size of the generated images.	
Settings	**Antialias**	dropdown	How much anti-aliasing to use in the generated images.	
Settings	**Background**	dropdown	Selects the background for the images (Gray, Transparent, or From Canvas).	From Canvas uses the current background in Mari.
Settings	**Frames**	entry box, slider	Sets the number of frames to generate - how many images should be in the sequence.	Range: 1 to 1000 Default: 360

Control	Type	What it does	Notes
Settings | **Play Animation**	checkbox	If you are using animated models or textures, lets you render the turntable with the animation.	When you check this, the **Frames** control above becomes disabled. This is because the frame range is taken from the Play Controls Palette.
Settings | **Offset**	entry box	If you are combining multiple turntables, lets you chain together sequences by offsetting the image numbers.	For example, with an offset of 0, the first image is MariTurntable_1.jpg. With an offset of 360, the first image is MariTurntable_361.jpg. You can use this to generate one sequence of frames for the x axis, then another for the y axis.
Settings | **Filters**	dropdown	If this is checked, the turntable images are produced with the LUT and any other applicable view filters applied. If this is not checked, no filters are applied to the images produced.	
Settings | **Lighting**	dropdown	Specify whether you want to render a turntable with **Flat**, **Basic**, or **Full** lighting.	
Info | **Comment**	entry box, dropdown	Sets a comment to include this at the bottom of the turntable.	
Info | **Text Size**	entry box, slider	Sets the text size for the comment.	Range: 0.10 to 10.00 Default: 1.00
Info | **Reference**	entry box, dropdown, button	Selects a reference image to include at the top right of your model.	Second dropdown specifies whether the colorspace is sRGB or Linear.
Output | **Path**	entry box, dropdown, button	Specifies where Mari should create the images.	Default: /local1

Control	Type	What it does	Notes
Output | **Template**	entry box, dropdown	Sets a template for the filenames.	This must include the **$FRAME** variable, so Mari assigns the frame numbers correctly to the files. Mari can export turntables as either **.tif**, **.png**, **.jpg**, or **.tga** files - change the file extension in the template to set the file type. Default: MariTurntable_$FRAME.jpg
Output | **Command**	entry box, dropdown	Specifies any commands to run on files after creating them.	
Preview	button	Generates the first frame of the turntable, enabling you to check the placement of reference images and text.	

71 Diagnostic Turntable Dialog

The **Diagnostic Turntable** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Creates a series of images showing the scene rotating through an axis. The axis of rotation is a vertical line through the current camera view, centered in the middle of the visible portion of the scene. You can export multiple channels at once. Mari creates all the images using the default shader and flat lighting.

How to Access It

• *Right-click* | Projector in Projectors Palette >  **Diagnostic Turntable**

• *Menubar* | **Camera** > **QuickTurntable**

Diagnostic Turntable Dialog Box Fields

Control	Type	What it does	Notes
Channel	list	Selects which channels to export turntables for.	
Settings | **Size**	dropdown	Selects the size of the generated images.	
Settings | **Antialias**	dropdown	How much anti-aliasing to use in the generated images.	
Settings | **Background**	dropdown	Selects the background for the images (Gray, Transparent, or From Canvas).	From Canvas uses the current background in Mari.

Control	Type	What it does	Notes
Settings | **Frames**	entry box, slider	Sets the number of frames to generate - how many images should be in the sequence.	Range: 1 to 1000 Default: 360
Settings | **Play Animation**	checkbox	If you are using animated models or textures, lets you render the turntable with the animation.	When you check this, the **Frames** control above becomes disabled. This is because the frame range is taken from the Play Controls Palette.
Settings | **Filters**	dropdown	If this is checked, the turntable images are produced with the LUT and any other applicable view filters applied. If this is not checked, no filters are applied to the images produced.	
Info | **Comment**	entry box, dropdown	Sets a comment to include this at the bottom of the turntable.	
Info | **Text Size**	entry box, slider	Sets the text size for the comment.	Range: 0.10 to 10.00 Default: 1.00
Info | **Reference**	entry box, dropdown, button	Selects a reference image to include at the top left of your model.	Second dropdown specifies whether the colorspace is sRGB or Linear.
Output | **Path**	entry box, dropdown, button	Specifies where Mari should create the images.	Default: /local1

Control	Type	What it does	Notes
Output | **Template**	entry box, dropdown	Sets a template for the filenames.	This must include the $FRAME variable, so Mari assigns the frame numbers correctly to the files. If you're generating turntables for multiple channels, this should include the $CHANNEL variable, as otherwise the later channels overwrite the earlier ones. Mari can export turntables as either **.tif**, **.png**, **.jpg**, or **.tga** files - change the file extension in the template to set the file type.
Output | **Command**	entry box, dropdown	Specifies any commands to run on files after creating them.	
Preview	button	Generates the first frame of the turntable, enabling you to check the placement of reference images and text.	

72 Quick Projection Dialog

The **Quick Projection** dialog is described below with functions for how to access it. A list of the controls on the dialog can be found in the table below.

What It Does

Sets the details that the quick projection tools use - the filename, file size, and lighting model for the quick project files.

How to Access It

- *Toolbars* | **Quick Projection**
- *Menubar* | **Camera** > **Quick Projection Settings**

Quick Projection Dialog Box Fields

Control	Type	What it does	Notes
Resolution	dropdown	Sets the resolution for the projected file.	
Color Depth	dropdown	Sets the color depth for the projected file.	
Clamp	checkbox	If enabled, Mari clamps the RGB values for the projected file.	
Path	entry box, button	Specifies the location and filename for the projected file.	

Control	Type	What it does	Notes
Lighting	dropdown	Sets whether the projected file contains lighting information: • **None** - no lighting information. • **Separate File** - lighting information is stored in a separate file. For example: diffuse.lighting.tif or diffuse.lighting.psd. • **Layer** - lighting information is stored in a separate layer (PSD files only).	