

11. Using 3D Features

Lesson overview

In this lesson, you'll learn how to do the following:

- Create a 3D environment in After Effects.
- Look at a 3D scene from multiple views.
- Create 3D text.
- Rotate and position layers along x, y, and z axes.
- Animate a camera layer.
- Add lights to create shadows and depth.
- Export an After Effects composition to use in Maxon Cinema 4D.
- Import a Cinema 4D scene into After Effects.



This lesson will take approximately an hour to complete. Download the Lesson11 project files from the Lesson & Update Files tab on your Account page at www.peachpit.com, if you haven't already done so. As you work on this lesson, you'll preserve the start files. If you need to restore the start files, download them from your Account page.



PROJECT: TITLE CARD FOR A PRODUCTION COMPANY

By clicking a single switch in the Timeline panel in After Effects, you can turn a 2D layer into a 3D layer, opening up a whole new world of creative possibilities. Maxon Cinema 4D Lite, included with After Effects, gives you even greater flexibility.

Getting started

Adobe After Effects can work with layers in two dimensions (x, y) or in three dimensions (x, y, z). So far in this book, you've worked primarily in two dimensions. When you specify a layer as three-dimensional (3D), After Effects adds the z axis, which provides control over the layer's depth. By combining this depth with a variety of lights and camera angles, you can create animated 3D projects that take advantage of the full range of natural motion, lighting and shadows, perspective, and focusing effects. In this lesson, you'll explore how to create and animate 3D layers. Then you'll use Maxon Cinema 4D Lite (installed with After Effects) to create high-end 3D text for a title card for a fictional production company.

First, you'll preview the final movie and then set up the project.

1. Make sure the following files are in the Lessons/Lesson11 folder on your hard disk, or download them from your Account page at www.peachpit.com now:
 - In the Assets folder: Lunar.mp3, Space_Landscape.jpg
 - In the Sample_Movie folder: Lesson11.mov
2. Open and play the Lesson11.mov file to see what you will create in this lesson. When you are done, quit QuickTime Player. You may delete this sample movie from your hard disk if you have limited storage space.

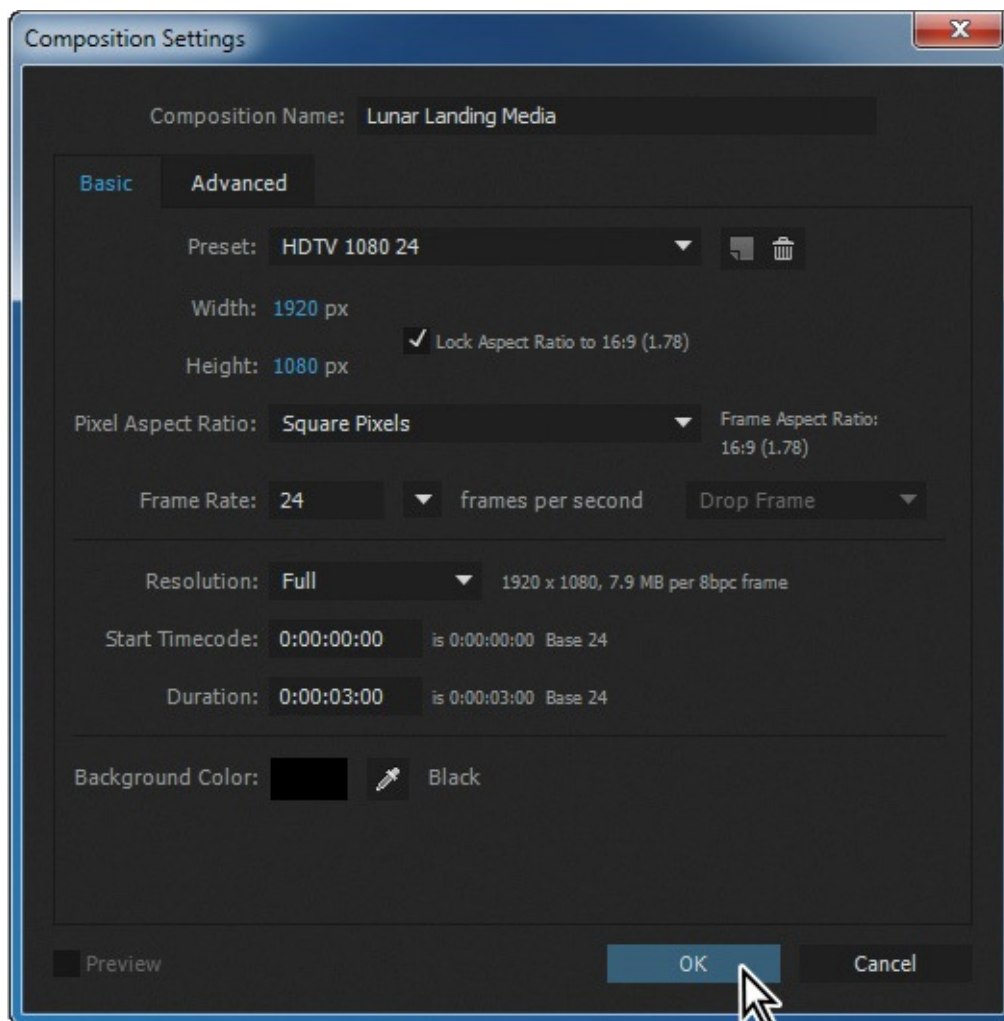
When you begin this lesson, restore the default application settings for After Effects. See

“[Restoring default preferences](#)” on page 2.

3. Start After Effects, and then immediately hold down Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS). When prompted, click OK to delete your preferences. Close the Start window.

After Effects opens to display an empty, untitled project.

4. Choose File > Save As > Save As.
5. In the Save Project As dialog box, navigate to the Lessons/Lesson11/Finished_Project folder. Name the project **Lesson11_Finished.aep**, and click Save.
6. Click the Create A New Composition button (🎬) at the bottom of the Project panel.
7. In the Composition Settings dialog box, do the following, and then click OK:
 - Name the composition **Lunar Landing Media**.
 - Choose HDTV 1080 24 from the Preset menu.
 - Enter **3:00** for the Duration.
 - Make sure the Background Color is black.



8. Choose File > Save.

Creating 3D text

In order to move something in 3D space, you need to make it a 3D object. Initially, any layer is flat, with only x (width) and y (height) dimensions, and can be moved only along those axes. But all you have to do to move a layer in three dimensions in After Effects is to turn on its 3D layer switch, which lets you manipulate the object along its z axis (depth). You'll create text, and then make it 3D. This layer will serve as a placeholder for text you'll create later in Cinema 4D.

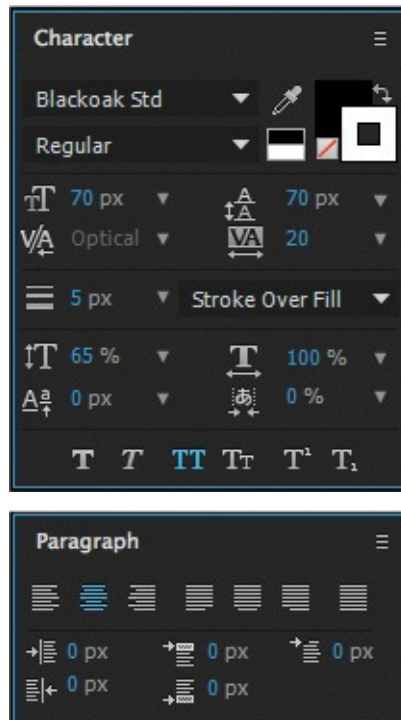
1. Click in the Timeline panel to make it active.
2. Select the Horizontal Type tool (T) in the Tools panel.

After Effects adds the Character and Paragraph panels to the stack and opens the Character panel.

● Note

If Blackoak Std is not available, install it using Typekit. Choose File > Add Fonts From Typekit, search for Blackoak Std, and sync it using Creative Cloud. Once you've synced the font, it will be available in all applications on your system.

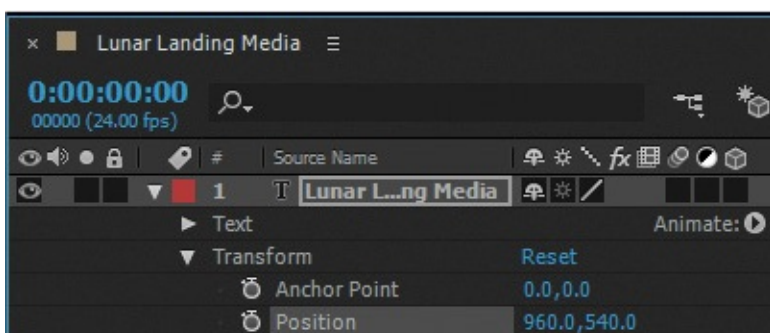
3. Make the Character panel wider, if necessary, and then select the following settings:
 - Font: Blackoak Std
 - Fill Color: Black
 - Stroke Color: White
 - Font Size: **70** px
 - Leading: **70** px
 - Tracking: **20%**
 - Stroke Width: **5** px
 - Vertical Scale: **65%**
4. Select All Caps, and then make sure Stroke Over Fill is chosen from the pop-up menu in the Character panel. (You may need to drag the bottom of the Character panel to extend it in order to see all settings.)



5. Open the Paragraph panel, and select the Center Text alignment option.
6. Click anywhere in the Composition panel and type **Lunar Landing Media**, with each word on its own line, as in the image below.
7. Select the Selection tool (⌘).
8. In the Timeline panel, expand the Transform properties for the Lunar Landing Media layer, and change the Position property to **960, 540**.

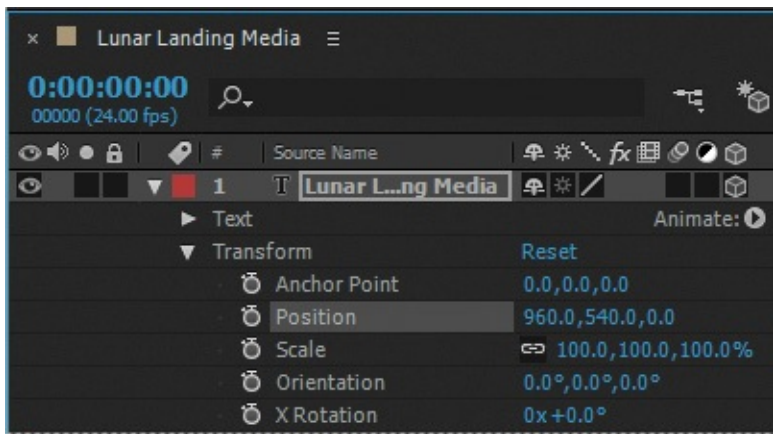
Note

After Effects uses a different coordinate numbering convention than other 3D applications. In After Effects, the upper left corner of the composition is considered 0, 0. In many 3D applications, including Maxon Cinema 4D, the center of the world (often the screen) is the origin, or 0, 0, 0 point.



The text is centered in the composition.

9. In the Timeline panel, select the 3D Layer switch (3D icon) for the Lunar Landing Media layer to give it three dimensions.



Three 3D Rotation properties appear in the Transform group for the layer, and properties that previously supported only two dimensions now display a third value for the z axis. In addition, a new property group named Material Options appears.

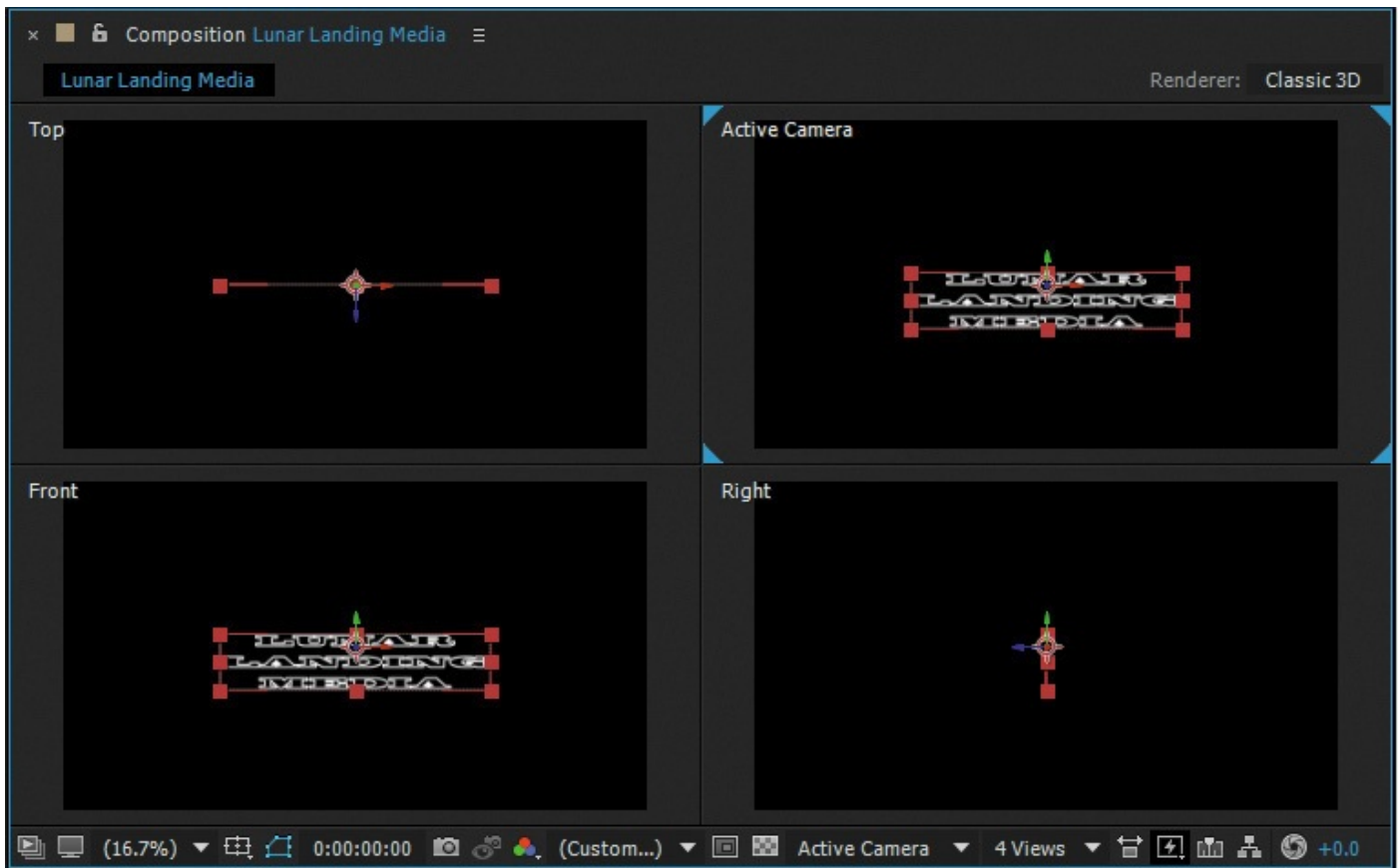
When the layer is selected, a color-coded 3D axis appears over the layer's anchor point in the Composition panel. The red arrow controls the x axis, the green arrow controls the y axis, and the blue arrow controls the z axis. At the moment, the z axis appears at the intersection of the x and y axes; it may be difficult to see against the black background. The letter x, y, or z appears when you position the Selection tool over the corresponding axis. When you move or rotate the layer while the pointer is over a particular axis, the layer's movement is restricted to that axis.

- 10.** Hide the properties for the Lunar Landing Media layer.

Using 3D views

Sometimes the appearance of 3D layers can be deceptive. For example, a layer might appear to be scaling smaller along its x and y axes when it's actually moving along the z axis. You can't always tell from the default view in the Composition panel. The Select View Layout pop-up menu at the bottom of the Composition panel lets you divide the panel into different views of a single frame, so you can see your work from multiple angles. You specify different views using the 3D View pop-up menu.

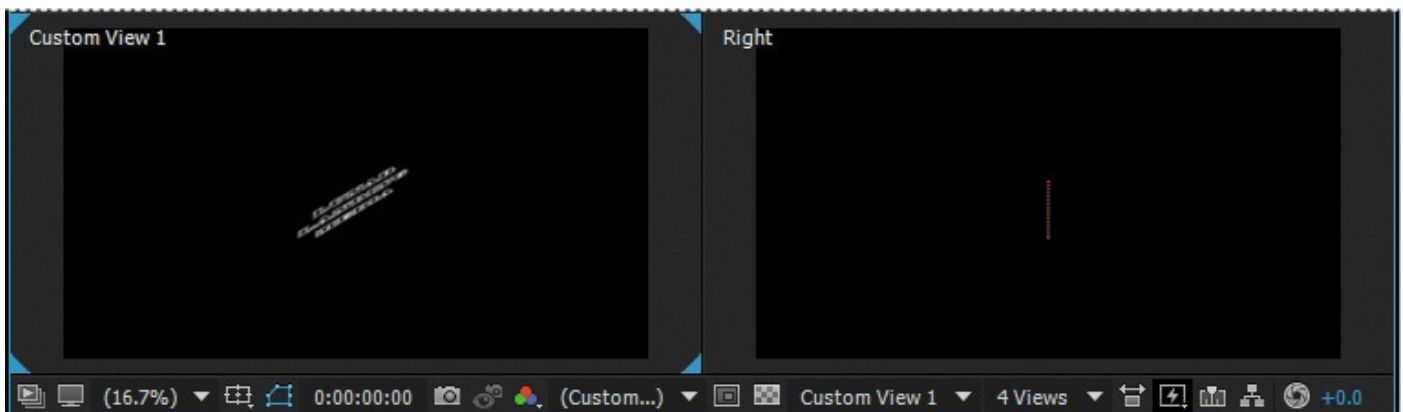
- 1.** At the bottom of the Composition panel, click the Select View Layout pop-up menu, and choose 4 Views, if your screen is large enough to display them. Otherwise, choose 2 Views - Horizontal.



With 4 Views selected, the upper left quadrant displays the scene from the top (along the y axis). There, you can see the z axis, and it's clear that the text layer has no depth. The lower left quadrant shows the view from the front. The upper right quadrant displays what the camera sees, but because there is no camera in the scene, it's the same as the front view. The lower right quadrant shows the view from the right, as if you were observing it along the x axis.

With 2 Views - Horizontal selected, the left view shows the scene from the top, and the right shows the camera's view (currently the front view).

2. Click the Front view to make it active. (Blue corner tabs appear around the active view.) Then, from the 3D View pop-up menu, choose Custom View 1 to see the scene from a different perspective. (If your Composition window displays only two views, click the Top view, and choose Custom View 1 from the 3D View pop-up menu.)



Viewing your 3D scene from different perspectives can help you align elements more accurately, view how layers are interacting with each other, and understand how objects,

lights, and cameras are positioned in 3D space.

Importing a background

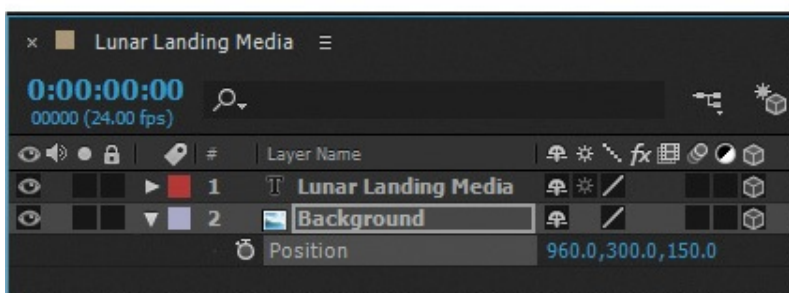
The text in your title card should appear to be moving in outer space. You'll import an image to use as a background.

1. Double-click an empty area of the Project panel to open the Import File dialog box.
2. Navigate to the Lesson11/Assets folder, and double-click the Space_Landscape.jpg file.
3. Drag the Space_Landscape.jpg item into the Timeline panel, placing it at the bottom of the layer stack.
4. Rename the Space_Landscape.jpg layer **Background**.
5. In the Timeline panel, select the Background layer, and then click the 3D Layer switch (📦) to convert it to a 3D layer.
6. Make sure the Background layer is selected. Then, in the Right view in the Composition panel, drag the z-axis arrow (the blue arrow) to the right to move the Background layer further behind the text. Watch the other layers as you drag to see how the layer interacts with 3D space.

Note

If you're displaying only two views, select the Active Camera view, and choose Right from the 3D View pop-up menu. Then complete step 6.

7. In the Timeline panel, press the P key to display the Position property for the Background layer. Change the Position to **960, 300, 150**.



8. Choose File > Save to save your work so far.

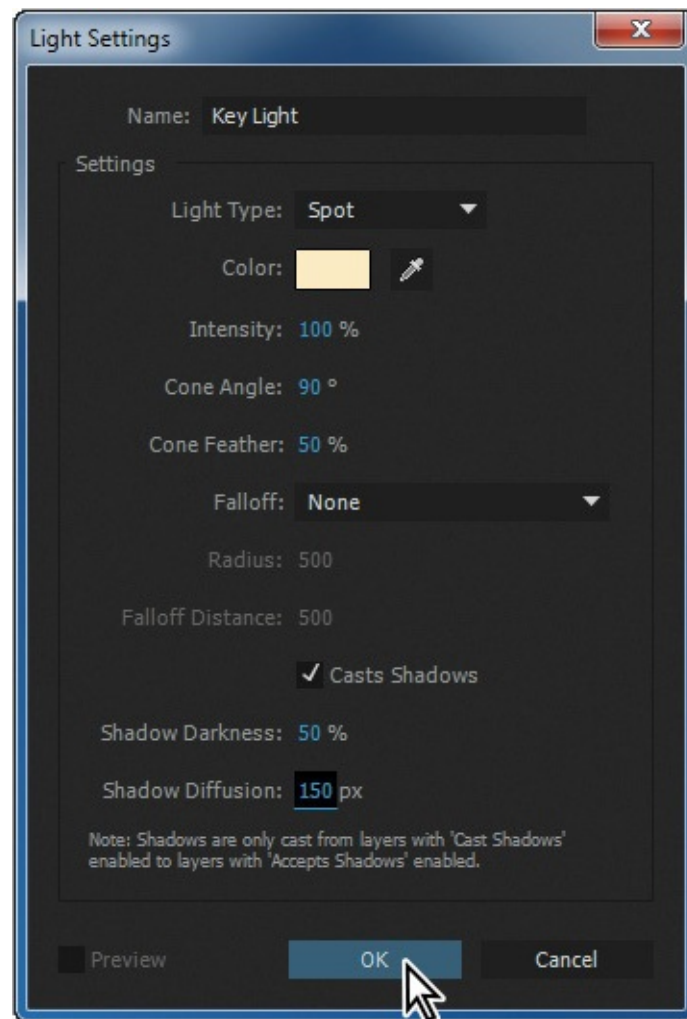
Adding 3D lights

You've created a 3D scene, but it doesn't yet look three-dimensional from the front. Adding light to a composition creates shadows that give depth to the scene. You'll create two new lights for your composition.

Creating a light layer

In After Effects, a *light* is a type of layer that shines light on other layers. You can choose from among four different types of lights—Parallel, Spot, Point, and Ambient—and modify them with various settings. Lights, by default, are directed toward a point of interest, which is the focus area of the scene.

1. Deselect all layers so that the new layer you create will appear at the top of the layer stack.
2. Press the Home key, or move the current-time indicator to the beginning of the time ruler.
3. Choose Layer > New > Light.
4. In the Light Settings dialog box, do the following:



- Name the layer **Key Light**.
- Choose Spot from the Light Type menu.
- Set Color to a light orange (R=255, G=235, B=195).
- Make sure Intensity is set to **100%** and Cone Angle to **90** degrees.
- Make sure Cone Feather is set to **50%**.
- Select the Casts Shadows option.

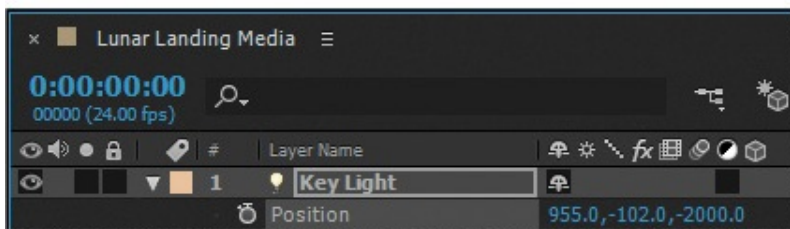
- Set Shadow Darkness to **50%** and Shadow Diffusion to **150** pixels.
- Click OK to create the light layer.

In the Timeline panel, the light layer is represented by a light bulb icon (💡). In the Composition panel, a wireframe illustrates the light's position, with a cross-hairs icon (⊕) representing the point of interest.

Positioning the spotlight

The point of interest for this light is currently pointed at the center of the scene. Because that's where the text layer is located, you don't need to adjust it. However, you'll change the light position so the scene looks less bleak.

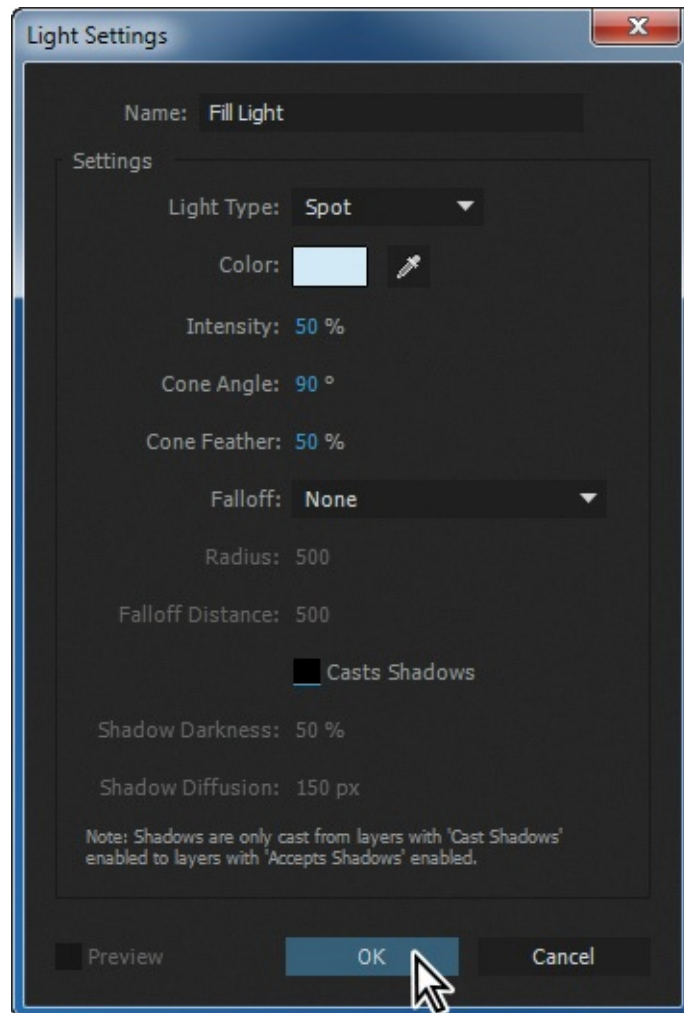
1. Select the Key Light layer in the Timeline panel, and press the P key to reveal the Position property for the light layer.
2. In the Timeline panel, type **955, -102, -2000** in the Position property. The light is now in front of and above the object, aiming down.



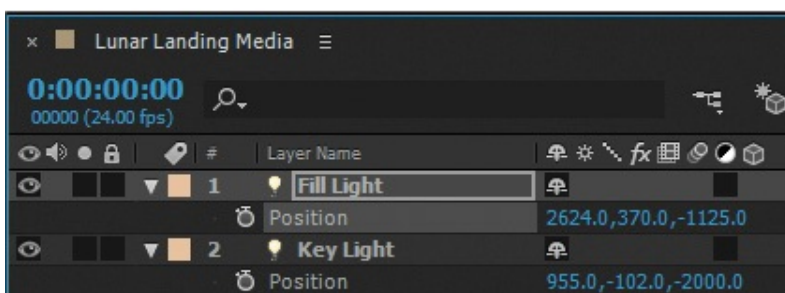
Creating and positioning the fill light

The key light gives the scene a moody look, but it's still very dark. You'll add a fill light to lighten the darker areas.

1. Choose Layer > New > Light.
2. In the Light Settings dialog box, do the following:



- Name the layer **Fill Light**.
 - Choose Spot from the Light Type menu.
 - Set the Color to a light blue (R=205, G=238, B=251).
 - Set Intensity to **50%** and Cone Angle to **90** degrees.
 - Make sure Cone Feather is set to **50%**.
 - Deselect Casts Shadows.
 - Click OK to create the light layer.
- 3.** In the Timeline panel, select the Fill Light layer, and press the P key to reveal its Position property.
- 4.** Change the position to **2624, 370, -1125**.



The text stroke, stars, and moon highlight are all much brighter now.

5. Hide the open properties for all layers, and choose File > Save.

Casting shadows and setting material properties

The scene is looking better, with a mix of warm and cool colors. However, it still doesn't look three-dimensional. You'll change the Material Options properties to determine how the 3D layers interact with the lights and shadows.

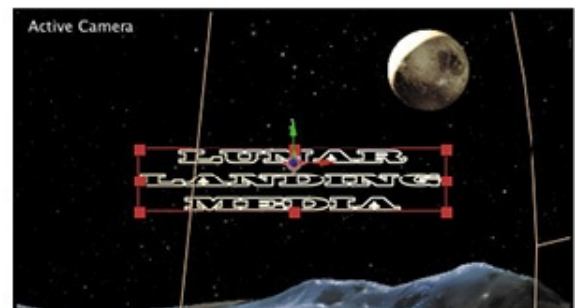
1. Select the Lunar Landing Media layer in the Timeline panel, and press the A key twice (AA) to reveal the Material Options properties for the layer.

The Material Options property group defines the surface properties of the 3D layer. You can also set shadow and light transmission values.

2. For Casts Shadows, click the word *Off* to toggle the setting on. (Make sure it says *On*, not *Only*.)

The text layer now casts shadows based on the lights in the scene.

3. Change the Diffuse value to **60%** and the Specular Intensity to **60%** so that the text layer reflects more of the light in the scene.
4. Increase the Specular Shininess to **15%** to give the surface a more metallic shine.



5. Hide the properties for the Lunar Landing Media layer.

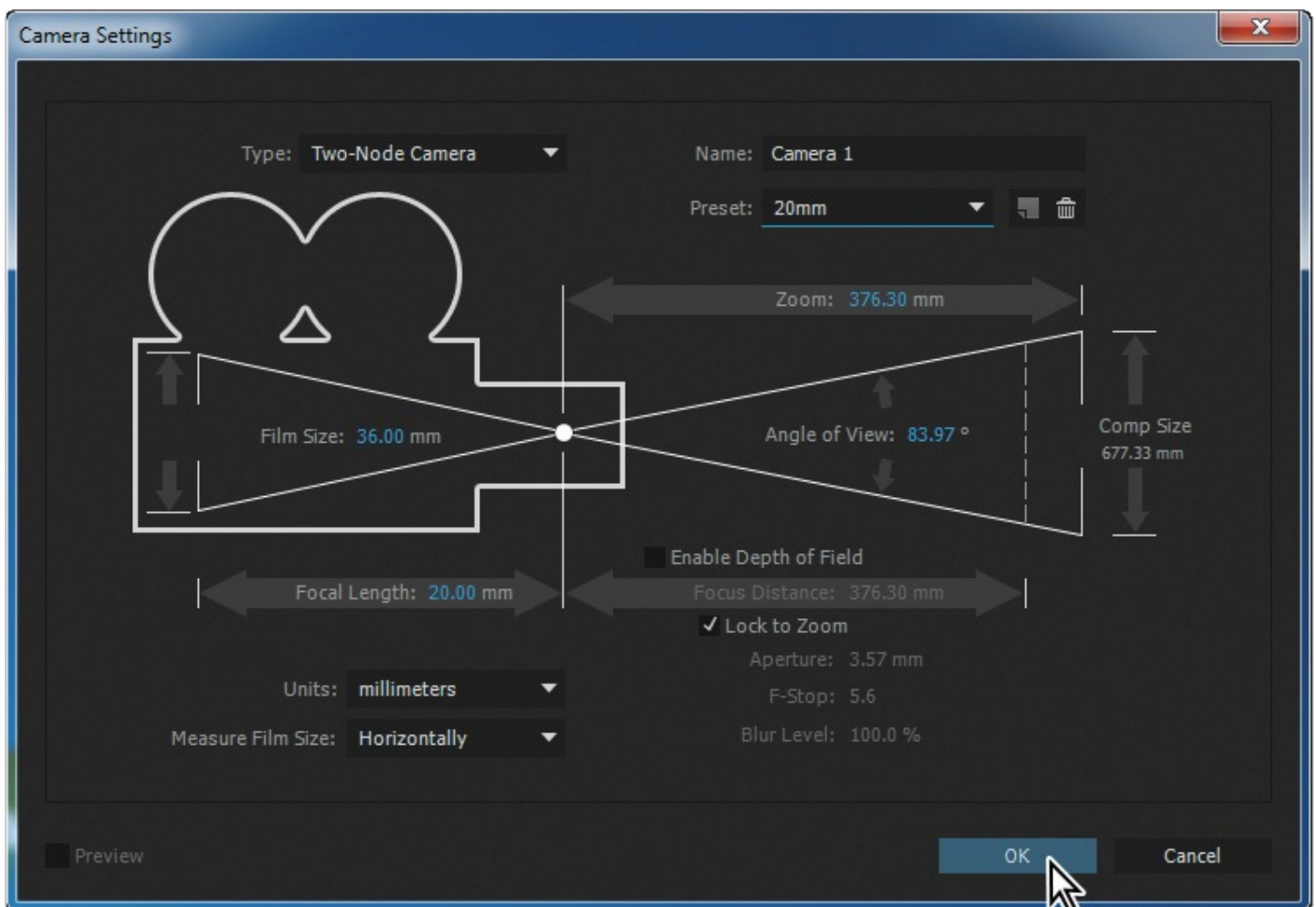
Adding a camera

You've already seen that you can view a 3D scene from different perspectives. You can also view 3D layers from various angles and distances using layers called *cameras*. When you set a camera view for your composition, you look at the layers as though you were looking through that camera. You can view a composition through the active camera or through a named, custom camera. If you have not created a custom camera, then the active camera is the same as the default composition view.

So far, you have been viewing this composition primarily from the Front, Right, and Custom View 1 angles. Currently, the Active Camera view doesn't let you see your composition from any specific angle. To see everything you want to see, you'll create a custom camera.

1. Deselect all layers, and then choose Layer > New > Camera.
2. In the Camera Settings dialog box, choose 20mm from the Preset menu, and click

OK.

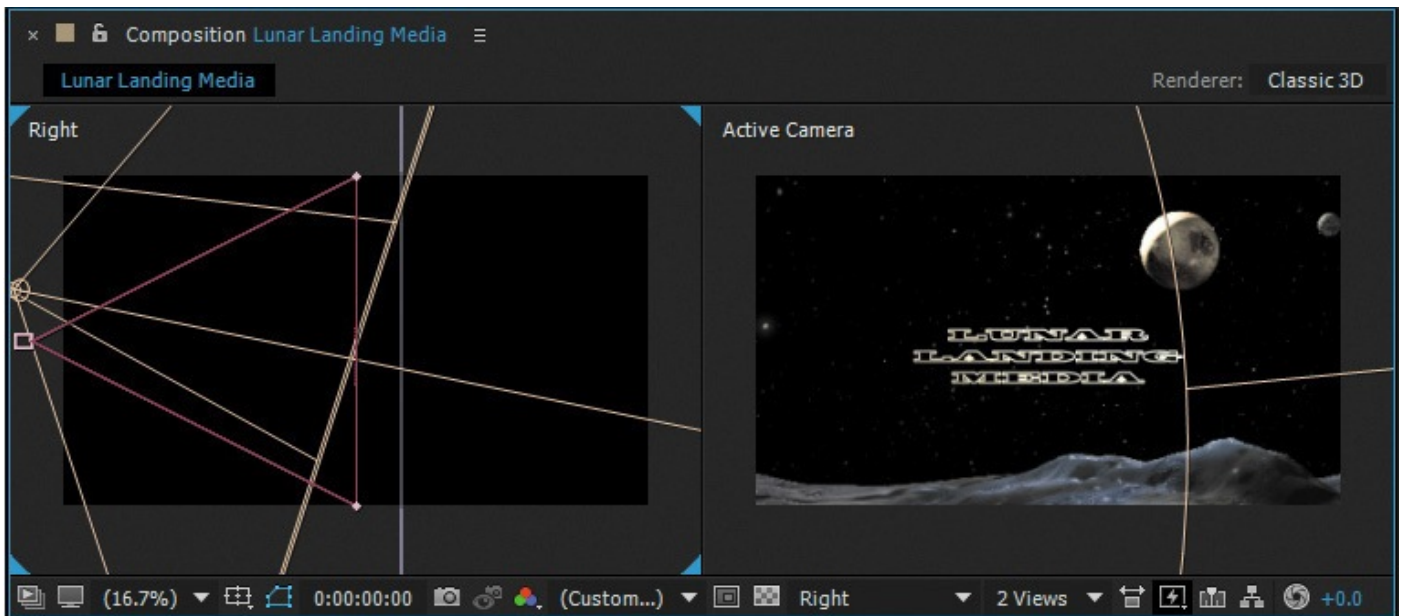


The Camera 1 layer appears at the top of the layer stack in the Timeline panel (with a camera icon next to the layer name), and the Composition panel updates to reflect the new camera layer's perspective. The view should change slightly, because the 20mm preset shows a wider field of view than the default. If you didn't notice the scene change, toggle the visibility of the Camera 1 layer to see it, and then make sure it's visible.

► Tip

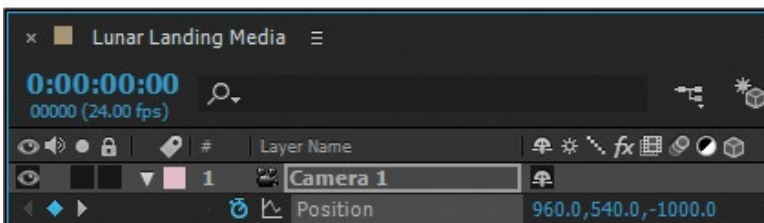
After Effects displays the wireframes for cameras by default. You can instruct After Effects to display wireframes only when cameras (or spotlights) are selected, or not at all. Choose View Options from the Composition panel menu, and then choose the options you want from the Camera Wireframes and Spotlight Wireframes menus. Then click OK.

3. Choose 2 Views - Horizontal from the Select View Layout pop-up menu at the bottom of the Composition panel. Change the view on the left to Right, and make sure the view on the right is set to Active Camera.



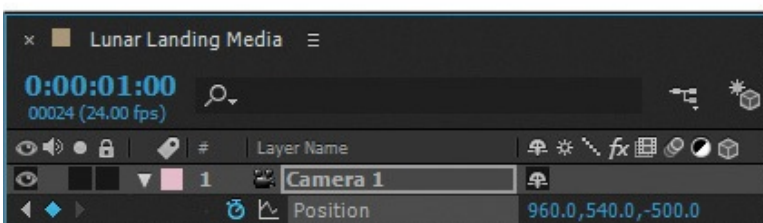
Like light layers, camera layers have a *point of interest* that can be used to determine what the camera looks at. By default, the camera's point of interest is the center of the composition. That's where your text currently is, so that point of interest works well.

4. Make sure the current-time indicator is at the beginning of the time ruler. Select the Camera 1 layer, and press the P key to reveal the Position property for the layer. Create an initial keyframe by clicking the stopwatch icon (🕒) next to the Position property.
5. Set the z-axis value to **-1000**.



The camera moves slightly closer to the text.

6. Go to 1:00.
7. Change the z-axis value to **-500**.



The camera moves much closer to the text.

8. Right-click (Windows) or Control-click (Mac OS) the second Position keyframe,

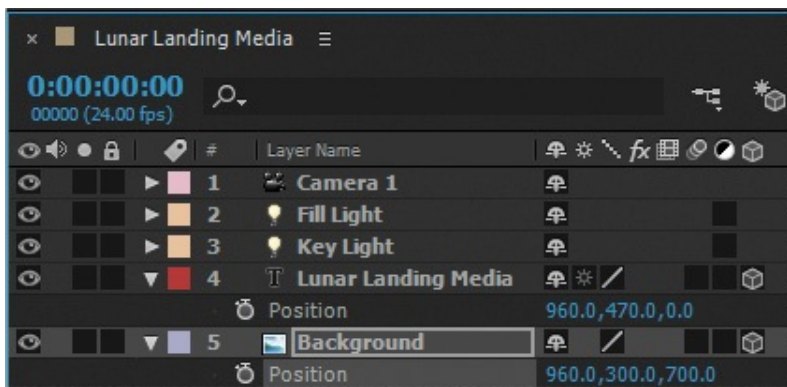
and choose Keyframe Assistant > Easy Ease In.

9. Move the current-time indicator through the timeline to 1:00. As the camera moves through the scene, notice how the light reflects off the text layer, and how the overall image is influenced by the wider camera lens.
10. Hide the Position property for the Camera 1 layer, and choose File > Save.

Repositioning layers

At 1:00, the text sits low on the screen. You want to add text below it, so you'll need to make some adjustments. Also, now that the camera is in place, you'll reposition the background layer so that more of the moonscape is visible.

1. Press the Home key, or move the current-time indicator to the beginning of the time ruler.
2. Select the Lunar Landing Media layer in the Timeline panel, and press P to see its Position property. Change the y-axis value for the Position property to **470**.
3. Select the Background layer in the Timeline panel, and press P to show its Position property. Then change the z-axis value for the Position property to **700**.



4. Hide the Position properties for the Background and Lunar Landing Media layers.
5. Click an empty area in the Timeline panel to deselect all layers.

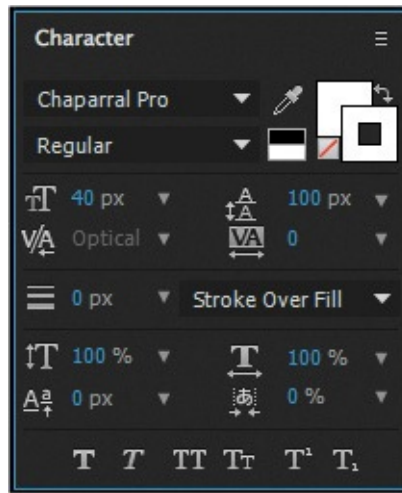
Adding a text layer

Now that there's space below the text, you'll create a new text layer to go there.

1. Select the Horizontal Type Tool (T) in the Tools panel. In the Character panel, select the following settings:
 - Font: Chaparral Pro

Note

If Chaparral Pro is not available, install it using Typekit. Choose File > Add Fonts From Typekit, search for Chaparral Pro, and sync it using Creative Cloud. Once you've synced the font, it will be available in all applications on your system.

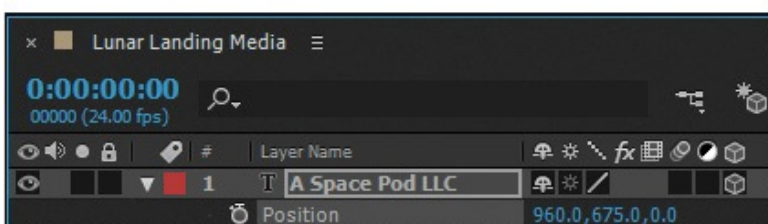


- Font Style: Regular
- Fill Color: White
- Font Size: **40 px**
- Leading: **100 px**
- Tracking Value: **0%**
- Stroke Width: **0 px**
- Vertical Scale: **100%**

2. Deselect All Caps in the Character panel.
3. In the Composition panel, click an insertion point, and type **A Space Pod LLC**.
4. Select the Selection tool (⌘) in the Tools panel.
5. In the Timeline panel, click the 3D Layer switch (3D icon) for the A Space Pod LLC layer to convert it to 3D.
6. Press the P key to display the Position property for the layer. Then type **960, 675, 0** for the Position property to situate the new text below *Lunar Landing Media*. Press P to hide the Position property.

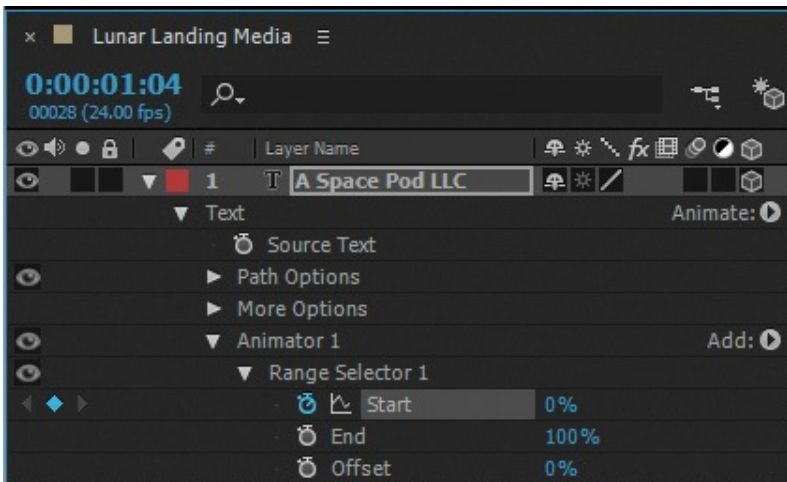
Note

You can use the onscreen widget to position the layer if you prefer.



7. Move to 1:04 in the timeline. Expand the A Space Pod LLC layer, and choose Opacity from the Animate pop-up menu.

8. Change the Opacity value under Range Selector 1 to **0%**.
9. Expand Range Selector 1, and make sure the Start value is 0%. Then click the stopwatch icon (⌚) to create an initial keyframe for the Start value.



10. Move to 1:12 in the timeline, and change the Start value to **100%**.
11. Manually scrub through the timeline to 1:12 to preview the animation.



12. Hide all open properties, and choose File > Save to save your work.

Working with Cinema 4D Lite

After Effects installs a version of Maxon Cinema 4D that allows motion graphic artists and animators to insert 3D objects directly into an After Effects scene without pre-rendering passes and potentially complicated file exchanges. You can import, create, and edit 3D objects in a variety of formats.

You'll use Cinema 4D Lite to create extruded text, which you'll add to the After Effects scene, replacing the initial text.

Exporting a scene file

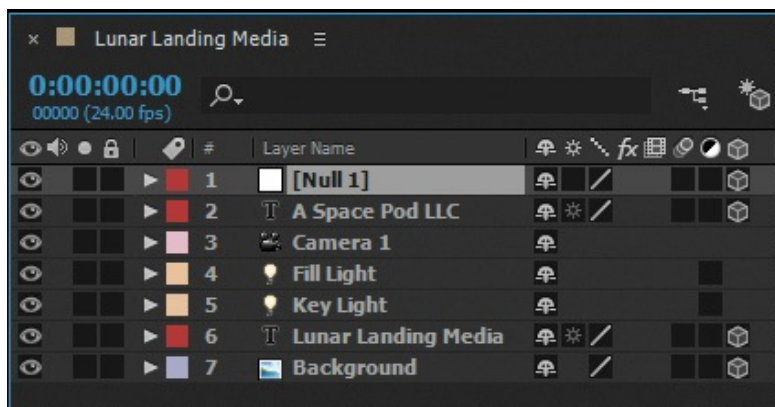
After Effects and Cinema 4D measure coordinates from different places in a scene. In After Effects, the 0, 0, 0 position is in the upper left corner of the scene; in Cinema 4D, the same coordinates are in the center. Keep this in mind when you move between the two applications. You can open an After Effects composition in Cinema 4D without a problem, but it's easier if you line everything up initially. You'll use a null object to do that.

1. Make sure the Timeline panel is active, and then choose Layer > New > Null Object.

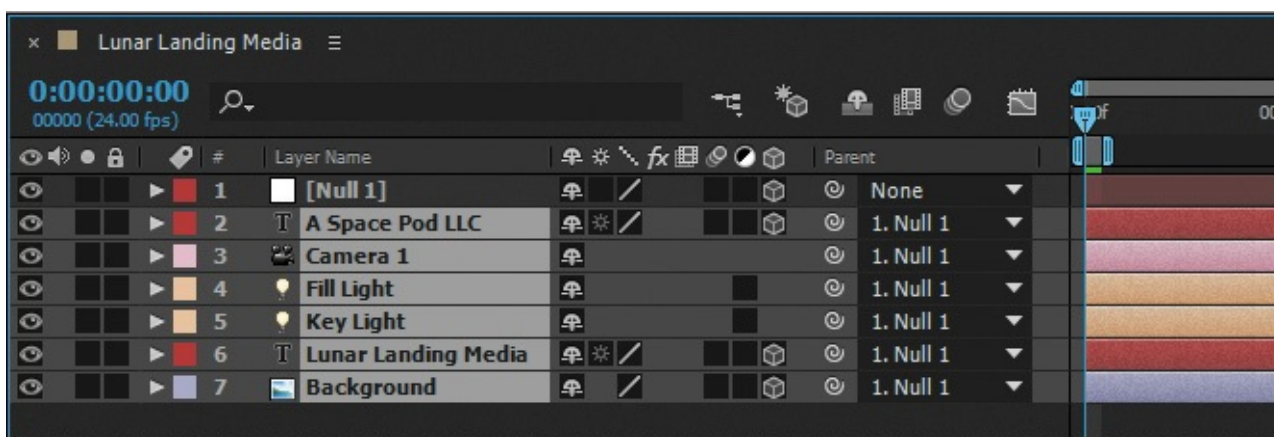
A null object is an invisible layer that has all the properties of a visible layer, so that it can

be a parent to any layer in the composition. You'll use a null object to reposition the scene to 0, 0, 0.

2. In the Timeline panel, select the Null 1 layer, and click the 3D switch (⏏) to make it a 3D layer.

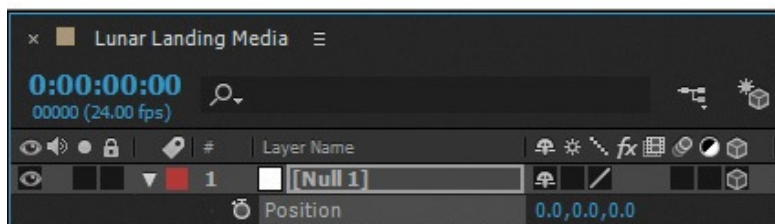


3. Select the A Space Pod LLC layer, and then Shift-click the Background layer to select all the layers except the Null 1 layer.
4. Choose 1. Null 1 from the Parent pop-up menu for the Background layer.



All the selected layers are parented to the Null 1 layer. Any changes to the null object affect them all.

5. Select the Null 1 layer, and press P to reveal its Position property. Then change the x and y values to 0.

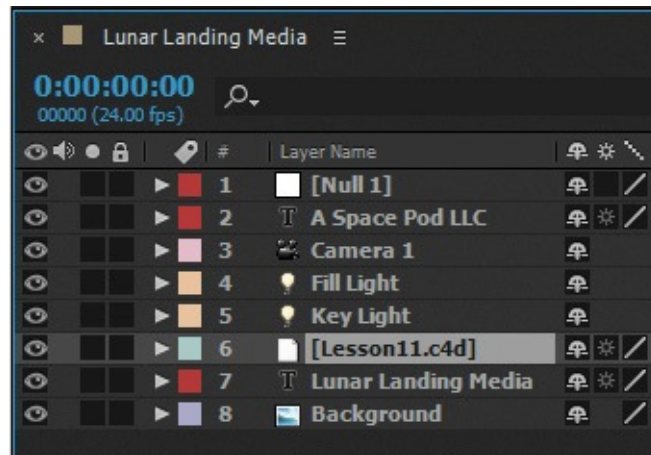


Nothing appears to happen in the Active Camera view in the Composition panel, but in the Right view, the contents of the scene appears to shift.

6. Hide the Position property for the Null 1 layer, and then choose File > Save.

7. Select the Lunar Landing Media composition in the Project panel, and then choose File > Export > Maxon Cinema 4D Exporter.
8. In the Save As dialog box, name the file **Lesson11.c4d**, and save it in the Lesson11 folder. Click Save to export the file.

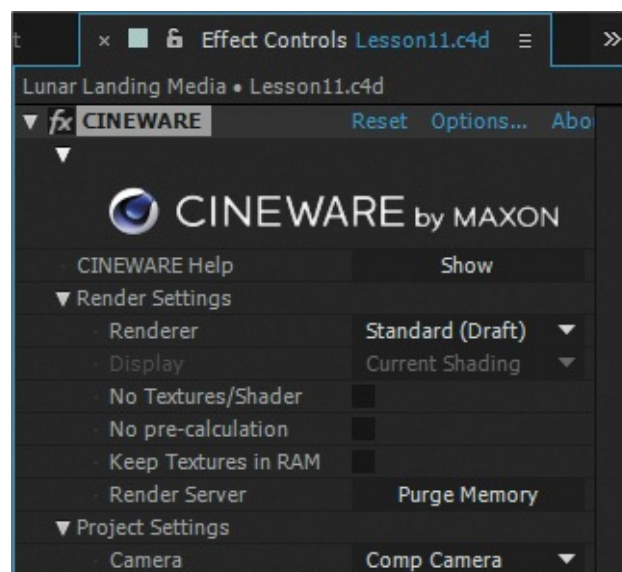
The Cinema 4D exporter exports the lights, cameras, and certain layers from your After Effects scene into a Cinema 4D file. You can also import the resulting C4D file directly into After Effects for compositing into an After Effects scene.



9. Choose File > Import > File, select the Lesson11.c4d file you just saved, and click Import or Open.
10. Drag the Lesson11.c4d file from the Project panel to the Timeline panel, placing it between the Key Light and Lunar Landing Media layers.

When you add a C4D file to the Timeline panel, After Effects opens the Cineware effect. Cineware creates and manages the link between After Effects and Cinema 4D.

While you're working with a Cinema 4D file in After Effects, you should usually choose Software or Standard (Draft) from the Renderer menu in the Cineware effect. However, when you prepare to render your final project, choose Standard (Final) from the Renderer menu.



11. Choose Standard (Draft) from the Renderer menu in the Cineware effect in the Effect Controls panel.

The Software option creates a low-resolution version of the file. The Standard (Draft) option gives you a better view of what the Cinema 4D file looks like.

12. Choose Comp Camera from the Camera menu in the Effect Controls panel.

The Comp Camera option lets you use the After Effects camera you created earlier in this composition to make any refinements to your camera motion. Cineware will automatically adjust the 3D objects from the Cinema 4D scene.

Creating 3D Text in Cinema 4D

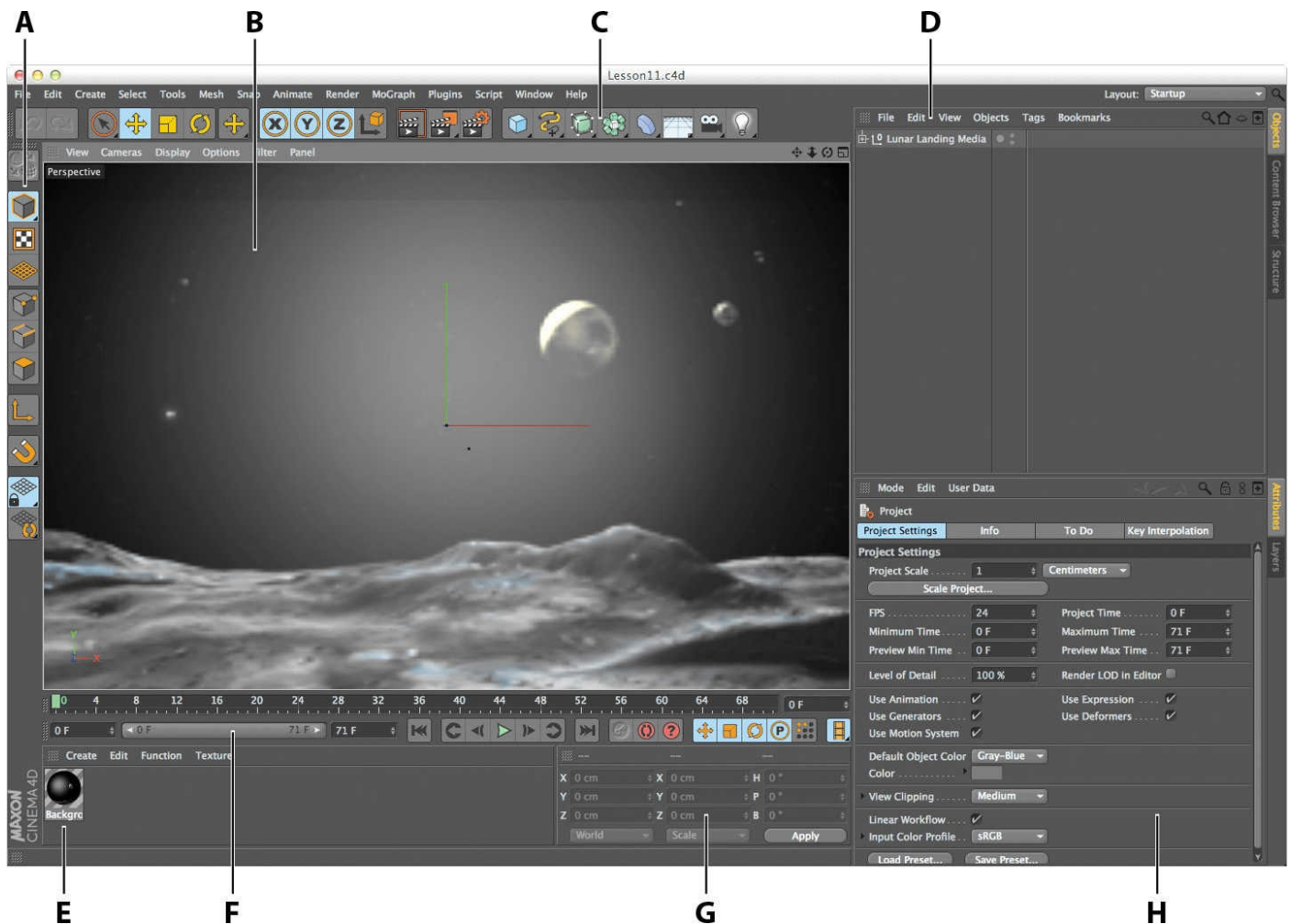
After Effects didn't export the text layers into Cinema 4D, but it did export the background solid object, the two lights you created, and the camera layer. You will use Cinema 4D Lite to create extruded text for this project.

1. In the Project panel, select the Lesson11.c4d file, and then choose Edit > Edit Original.

● Note

When you open Cinema 4D Lite, you may be prompted to update the application.

The Lesson11.c4d file opens in Cinema 4D Lite.

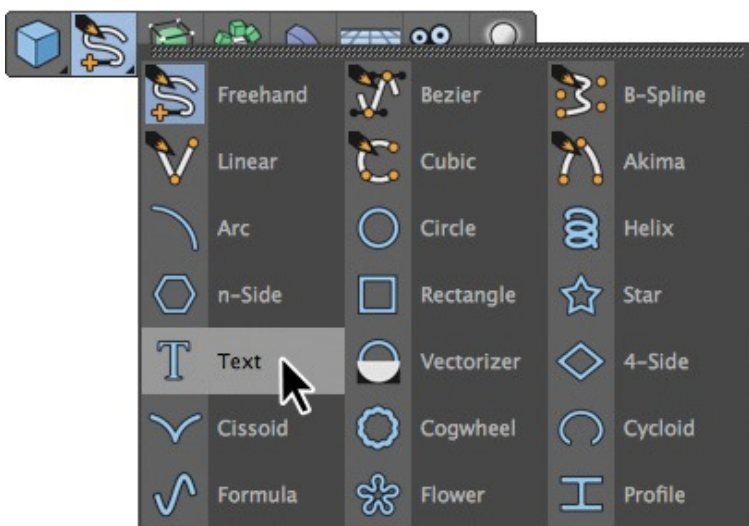


A. Modes icon palette **B.** Viewport **C.** Tools icon palette **D.** Object Manager **E.** Material Manager **F.** Timeline **G.** Coordinates Manager **H.** Attribute Manager

2. In the Cinema 4D Timeline, change the clip length to **72** frames: Increase the value in the box on the right, and then extend the timeline to 72 frames.

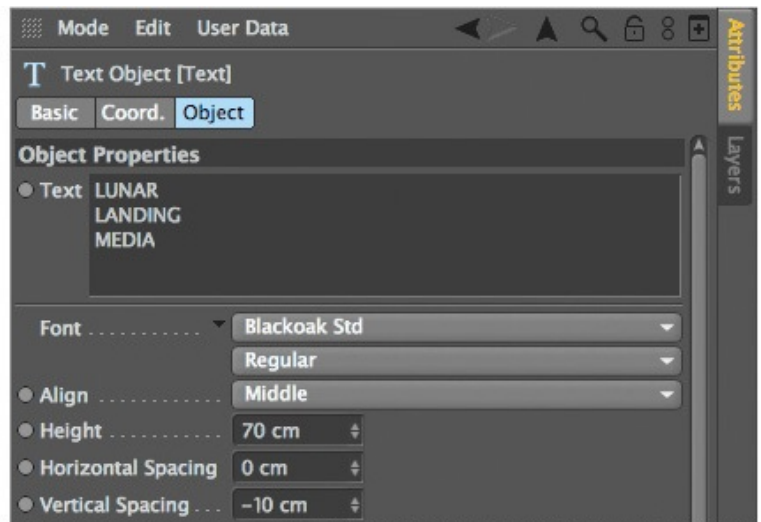


3. In the Tools icon palette (below the menu bar), click and hold the triangle in the lower right corner of the Freehand icon (?) to display its menu, and then select the Text tool (T).



A basic text spline appears in the middle of the scene.

4. In the text box in the Attribute Manager, type **LUNAR LANDING MEDIA**, with each word on its own line.
5. In the Attribute Manager, change the text settings as follows:
 - Font: Blackoak Std
 - Align: Middle
 - Height: **70 cm**
 - Vertical Spacing: **-10 cm**



6. Drag the playhead in the Timeline to frame 24 (1:00).

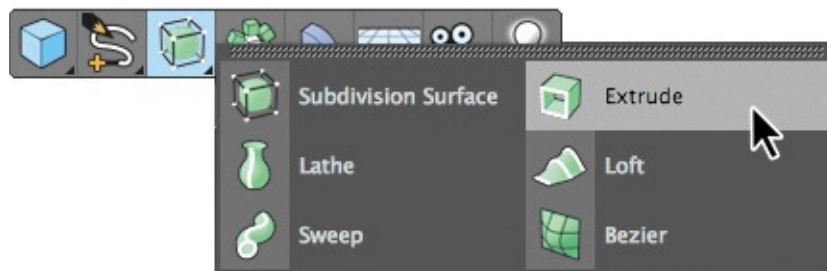
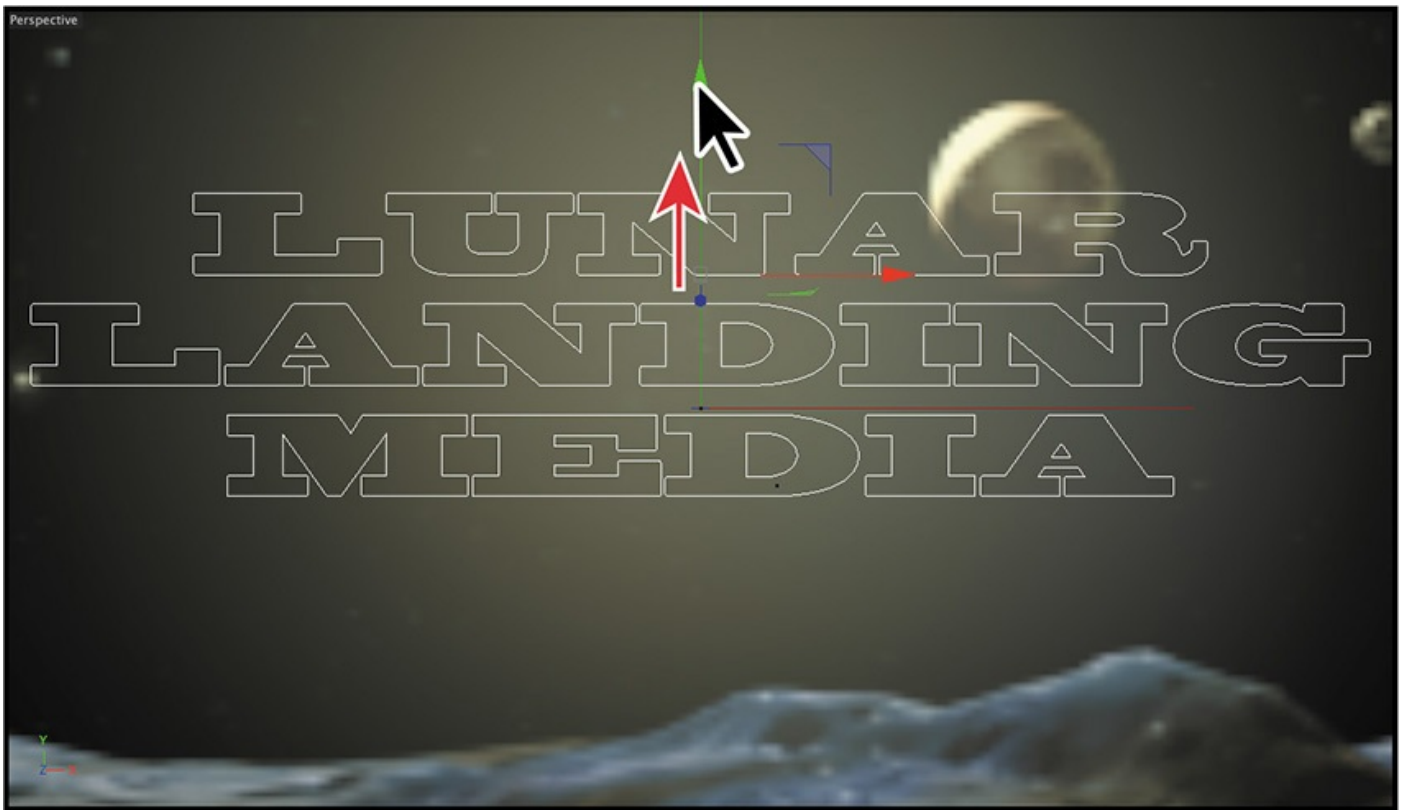


The camera moves just as it did in After Effects. There's also a 3D axis in the Viewport similar to the one in the Composition panel in After Effects.

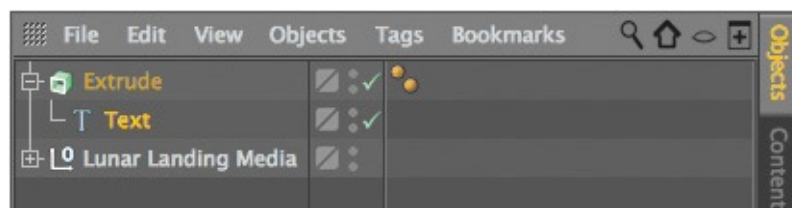
7. Click the y-axis arrow (the green one), and drag the text object until its position is similar to the one in the image. Your goal is to make sure there's room for the other text below it.

● Note

If you are unable to select the y-axis arrow, select the Move tool first.



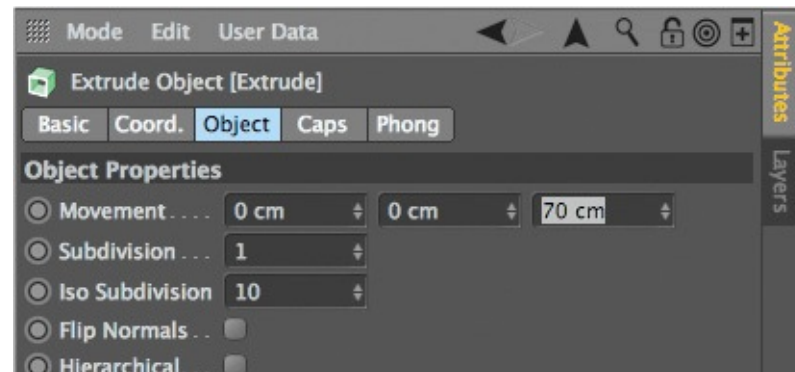
8. In the Tools icon palette, click and hold the triangle in the lower right corner of the Subdivision Surface icon (📐) to view its menu, and then select Extrude (📐).
9. In the Object Manager, select the Text object, and then drag it to the middle column to the right of Extrude to parent it. You'll know you've positioned it correctly when the cursor becomes a box with an arrow pointing down (📏).





In the Object Manager, the Text object appears nested below the Extrude object, indicating the parent relationship. In the Viewport, the text is now extruded.

10. In the Object Manager, click the Extrude object to make it active (it turns bright orange).
11. In the Attribute Manager, select the Object tab, and then change the z-axis Movement value to **70** cm.

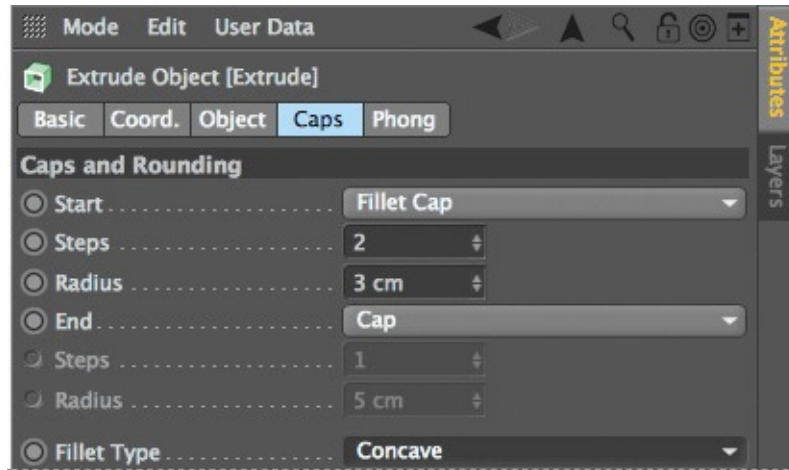


The extruded text looks much better. You'll enhance the text further by beveling the edges and making some adjustments.

12. In the Attribute Manager, select the Caps tab, and do the following:
 - Choose Fillet Cap from the Start menu.
 - Increase the Steps value to **2**.
 - Decrease the Radius value to **3** cm.

- Choose Concave from the Fillet Type menu.

The changes you made give the text an interesting edge.



Surfacing the object

Cinema 4D Lite comes with a number of preset surfaces you can apply to 3D objects. You'll add a metallic surface to the text.

1. In the Materials Manager, click Create, and then choose Load Material Preset > Lite > Materials > Effects > Mazzie B-Blue.
2. In the Materials Manager, click the surface you just added, and drag it onto the text in the Viewport.



3. Choose File > Save.

Note

If you see a message about version compatibility, click Yes to proceed and save the file.

Updating the project in After Effects

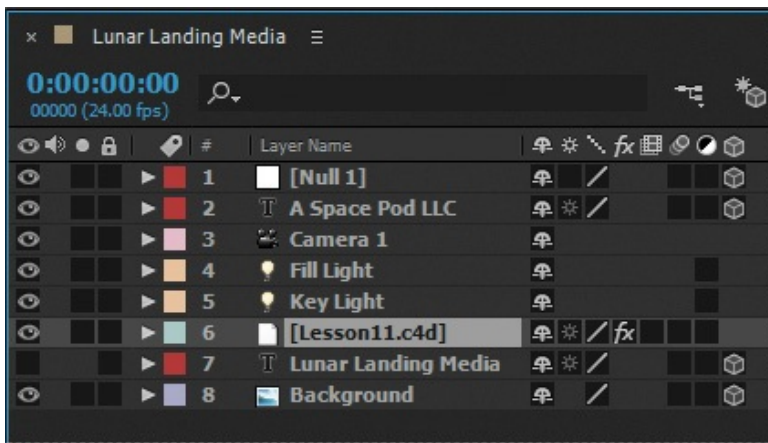
You've made all the changes you need to make in Cinema 4D Lite, so you can now return to After Effects to see how it works in your project. As a final touch, you'll add an audio file for the title card.

1. Return to After Effects.

After Effects updates, and the Cinema 4D object appears in the Active Camera view in the Composition panel.

2. Choose 1 View from the Select View Layout pop-up menu at the bottom of the Composition panel. Choose Active Camera from the 3D View pop-up menu, if it isn't already selected.

3. In the Timeline panel, deselect the Video switch for the Lunar Landing Media text layer to hide it.



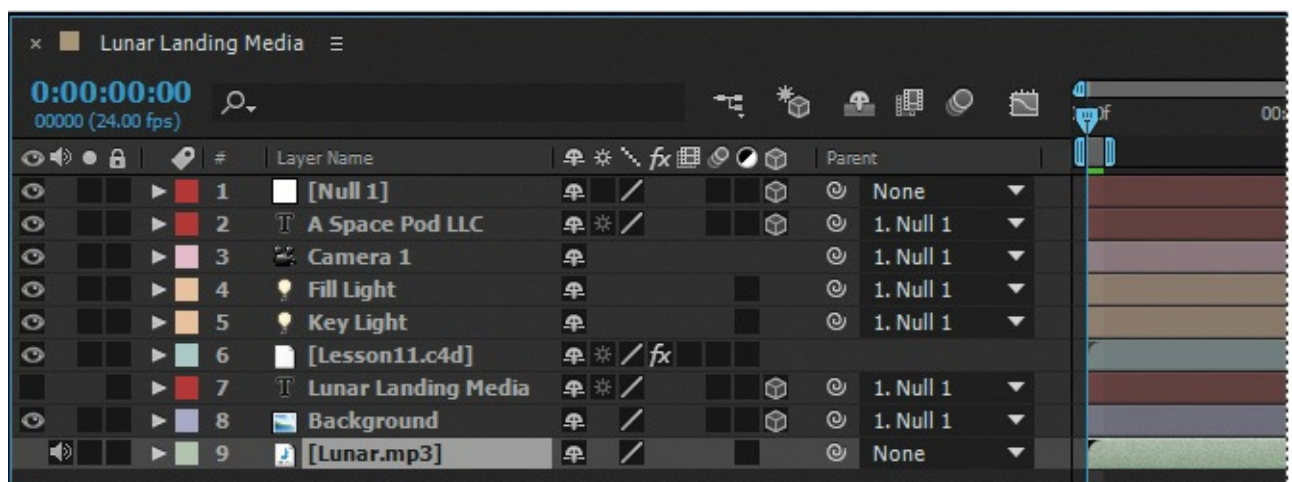
The original text layer was a placeholder for the 3D text you created in Cinema 4D Lite. You don't need it in the final project.

4. If you need to reposition the text in the Cinema 4D file, return to Cinema 4D Lite, adjust the text, and choose File > Save. Then return to After Effects again.



You can move back and forth between After Effects and Cinema 4D Lite.

5. Double-click an empty area of the Project panel, and then navigate to the Lesson11/Assets folder. Double-click the Lunar.mp3 file to import it.
6. Drag the Lunar.mp3 file from the Project panel to the bottom of the layer stack in the Timeline panel.



7. Choose File > Save.
8. (Optional) Preview the project before you render. To cache the frames in RAM faster, expand the properties for the Lesson11.c4d layer in the Timeline panel, and

click CINEWARE under Effects. Then, in the Effect Controls panel, select both No Pre-calculation and Keep Textures In RAM.



You're ready to render the file.

9. Select the Lunar Landing Media composition in the Project panel, and choose Composition > Add To Render Queue.
10. In the Render Queue panel, click Best Settings to open the Render Settings dialog box. Then choose Half from the Resolution menu. (If your system is very slow, you may want to choose Quarter or Third.) Click OK.
11. Click the blue text next to Output To, and navigate to the Lesson11/Finished_Project folder. Then click Save.
12. Click Render in the Render Queue panel.
13. When your project has rendered, open it in QuickTime to see your handiwork!

You've only just scratched the surface of what is possible when working with a 3D scene in After Effects, as well as what you can do with the workflow between Adobe After Effects and Maxon Cinema 4D Lite.

Review questions

1. What happens to a layer when you select its 3D Layer switch?
2. Why is it important to look at multiple views of a composition that contains 3D layers?
3. What is a camera layer?
4. What is a 3D light in After Effects?

Review answers

1. When you select a layer's 3D Layer switch in the Timeline panel, After Effects adds a third axis, the z axis, to the layer. You can then move and rotate the layer in three dimensions. In addition, the layer takes on new properties that are unique to 3D layers, such as the Materials Options property group.
2. The appearance of 3D layers can be deceptive, depending on the view in the Composition panel. By enabling 3D views, you can see the true position of a layer relative to other layers in the composition.
3. You can view After Effects 3D layers from any number of angles and distances using layers called *cameras*. When you set a camera view for your composition, you look at the layers as though you were looking through that camera. You can choose

between viewing a composition through the active camera or through a named, custom camera. If you have not created a custom camera, then the active camera is the same as the default composition view.

- 4.** In After Effects, a light is a type of layer that shines light on other layers. You can choose from among four different types of lights—Parallel, Spot, Point, and Ambient—and modify them with various settings.