DOC VERSION v2.3 - NOVEMBER 2016

Contents

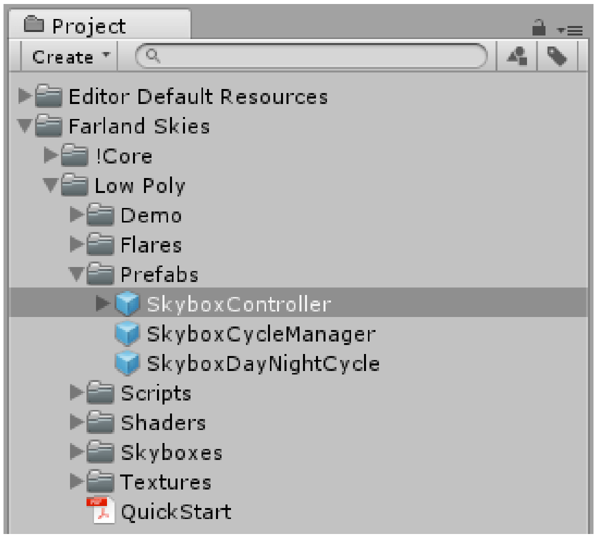
Folders structure

This asset contains two main folders:

- Editor Default Resources
- Farland Skies

The ***Farland Skies*** folder is movable and doesn't require to be in the root of your assets folder. You can freely relocate it to some your "3rd Party" folder, and all should work fine then.

Regarding the ***Editor Default Resources***, it's a special folder and Unity requires it to be in the root, so please do NOT move it anywhere.



Project
Create

- Editor Default Resources
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  - Low Poly
    - Demo
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      - SkyboxController
      - SkyboxCycleManager
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Integrating and configuring skybox

It's pretty easy to integrate skybox to your scene. All you need to do it's just drag the ***SkyboxController*** prefab to the hierarchy window.

Skybox will be assigned automatically for this scene and now you can use ***SkyboxController*** to manage its settings, either from scripts or directly in the editor.

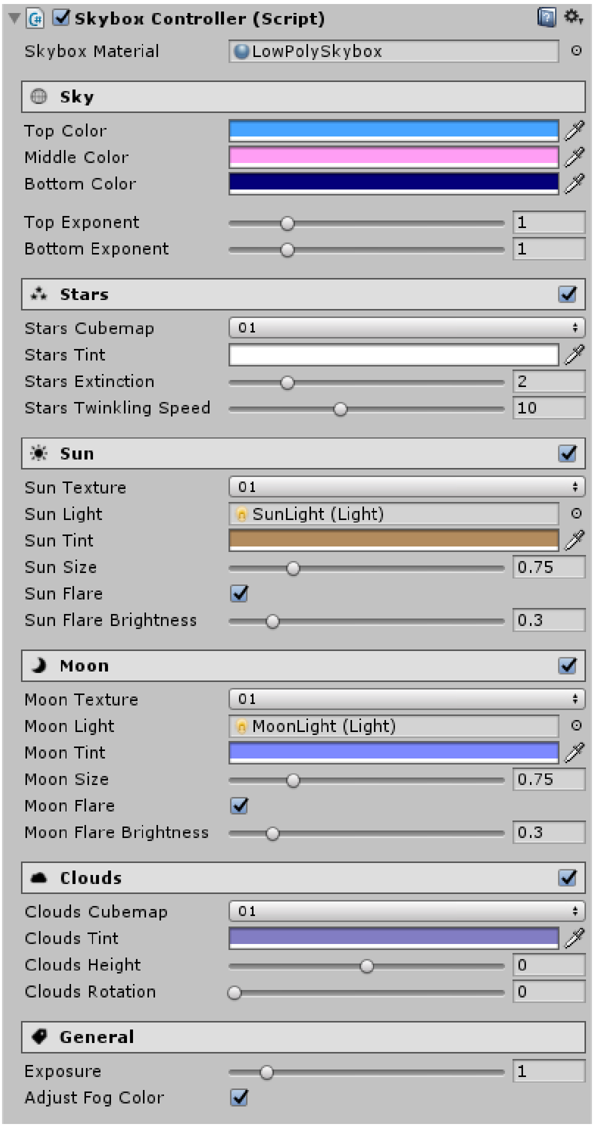
Editor properties

Sky

This section allows you to customize basic sky gradient with three color values: at the top pole, on the equator, and at the bottom pole. ***Top/Bottom Exponent*** **sliders** can be used to adjust linear interpolation between corresponding pole and equator.

Stars

Here you can configure stars tint, extinction, and twinkling speed. ***Stars extinction*** is a reduction



☑ Skybox Controller (Script)

Skybox Material	LowPolySkybox
Sky	
Top Color	🟦
Middle Color	🟪
Bottom Color	🟦
Top Exponent	1
Bottom Exponent	1
Stars	☑
Stars Cubemap	01
Stars Tint	⬜
Stars Extinction	2
Stars Twinkling Speed	10
Sun	☑
Sun Texture	01
Sun Light	SunLight (Light)
Sun Tint	🟫
Sun Size	0.75
Sun Flare	☑
Sun Flare Brightness	0.3
Moon	☑
Moon Texture	01
Moon Light	MoonLight (Light)
Moon Tint	🟦
Moon Size	0.75
Moon Flare	☑
Moon Flare Brightness	0.3
Clouds	☑
Clouds Cubemap	01
Clouds Tint	🟪
Clouds Height	0
Clouds Rotation	0
General	
Exposure	1
Adjust Fog Color	☑

in stars apparent brightness closer to the horizon. ***Stars twinkling*** is a variation in stars apparent brightness caused by the atmospheric turbulence.

Sun & Moon

In this section, you can customize soon and moon appearance. All settings are straightforward, except ***flare brightness***. Actual flare brightness depends on correspondent tint alpha, and this property is just a coefficient for that value.

Clouds

This section allows you to customize clouds colors and positioning.

General

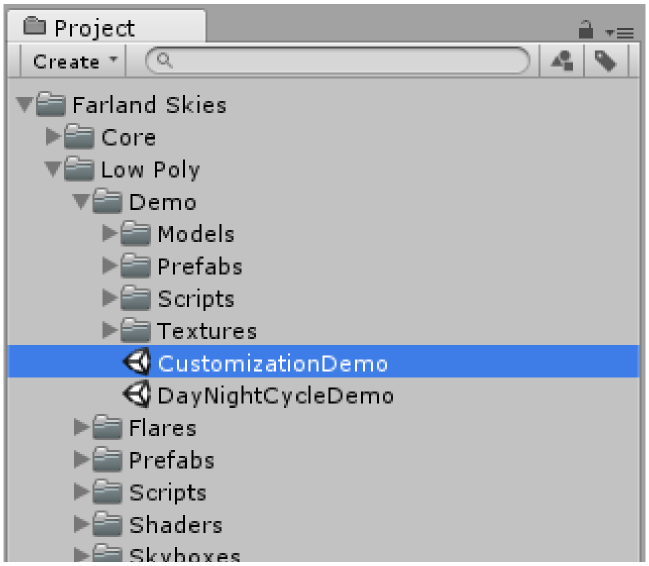
In general section, you can adjust exposure for the whole sky. Also, there is a checkbox that allows you to keep fog color in sync with the sky middle color automatically.

Access From Scripts

SkyboxController implements the "singleton" pattern, so you can easily access all its properties from anywhere in your scripts:

```
SkyboxController.Instance.MiddleColor = Color.blue;
SkyboxController.Instance.TopExponent = 0.75f;
SkyboxController.Instance.Rotation += 1f;
```

Please take a look at the ***CustomizationDemo*** scene to get more details.



Day-night cycle

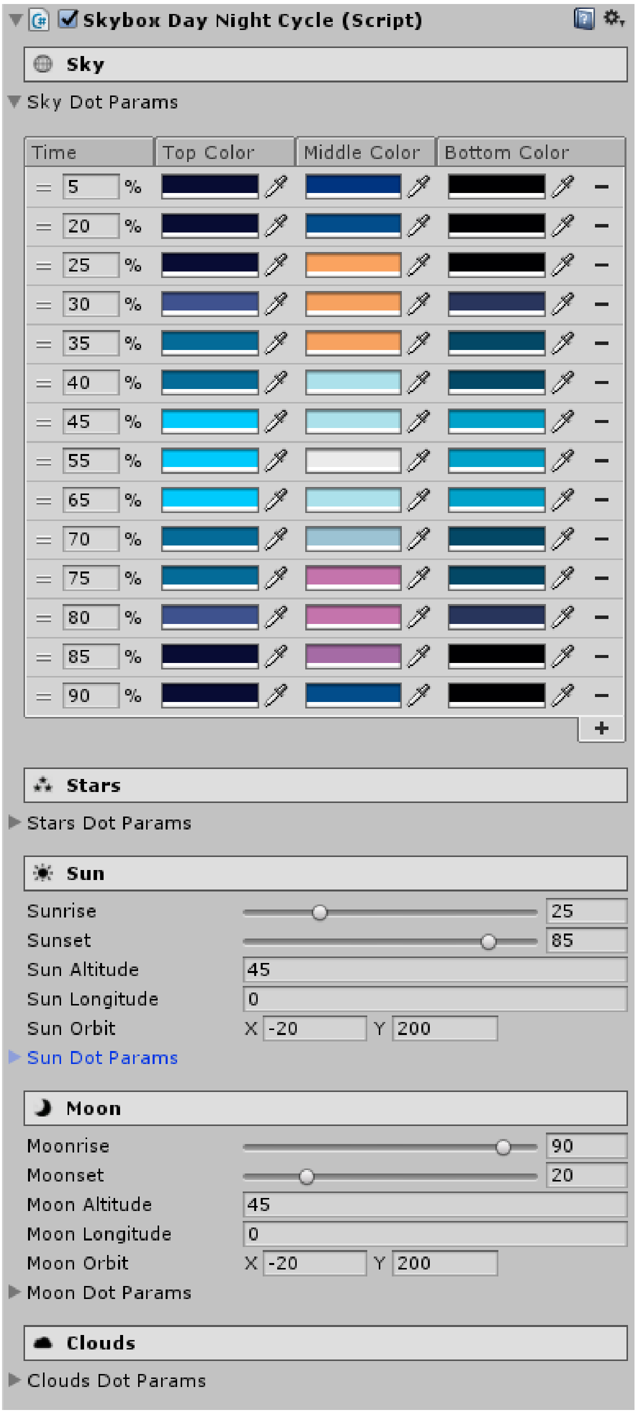
This package comes with a handy script to manage skybox day-night cycle.

At first, you need to drag the ***SkyboxDayNightCycle*** prefab somewhere to your scene.

Then adjust prefab properties to fit your needs:

- ***Sky DoT Params*** is a list of sky colors, based on time of day. Each list item contains one "time" filed that should be specified in percents (0-100). Also, there are three"color" fields, corresponding to the skybox color settings with the same names.
- ***Stars DoT Params*** list allows you manage stars tint color over time. It works in the same way - just specify a time in percents and tint color for each element.
- ***Sun & Moon DoT Params*** are for configuring sun & moon appearance and light params depending on time. Use the same approach as above for setting it up.
- ***Clouds Dot Params*** list allows you manage clouds tint color over time. It works in the same way as above.

SkyboxDayNightCycle script will automatically interpolate values between list items and update skybox parameters depending on its ***TimeOfDay*** property.



☑ Skybox Day Night Cycle (Script)

Sky

Sky Dot Params

Time	Top Color	Middle Color	Bottom Color
5 %	⬛	🟦	⬛
20 %	⬛	🟦	⬛
25 %	⬛	🟧	⬛
30 %	🟦	🟧	⬛
35 %	🟦	🟧	🟦
40 %	🟦	🟦	🟦
45 %	🟦	🟦	🟦
55 %	🟦	⬜	🟦
65 %	🟦	🟦	🟦
70 %	🟦	🟦	🟦
75 %	🟦	🟪	🟦
80 %	🟦	🟪	⬛
85 %	⬛	🟪	⬛
90 %	⬛	🟦	⬛

Stars

Stars Dot Params

Sun

Sunrise 25
Sunset 85
Sun Altitude 45
Sun Longitude 0
Sun Orbit X -20 Y 200
Sun Dot Params

Moon

Moonrise 90
Moonset 20
Moon Altitude 45
Moon Longitude 0
Moon Orbit X -20 Y 200
Moon Dot Params

Clouds

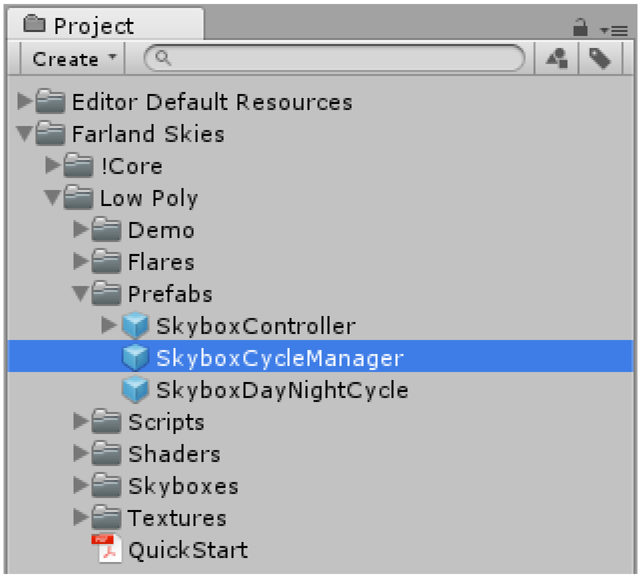
Clouds Dot Params

However, ***SkyboxDayNightCycle*** doesn't run through day-night cycle automatically. It requires few lines of code by yourself, but in this way you can fully control your animation cycle duration, make your time flow non-linear, etc.

The simplest example to do so:

```
public void Update()
{
    SkyboxDayNightCycle.Instance.TimeOfDay
        += (Time.deltaTime / DayDuration) * 100f;
}
```

If you don’t want to bother with scripts by yourself, then you can just grab ***SkyboxCycleManager*** prefab and add it to your scene. It will manage animation cycle progress automatically.



```
▶ Editor Default Resources
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          QuickStart
```
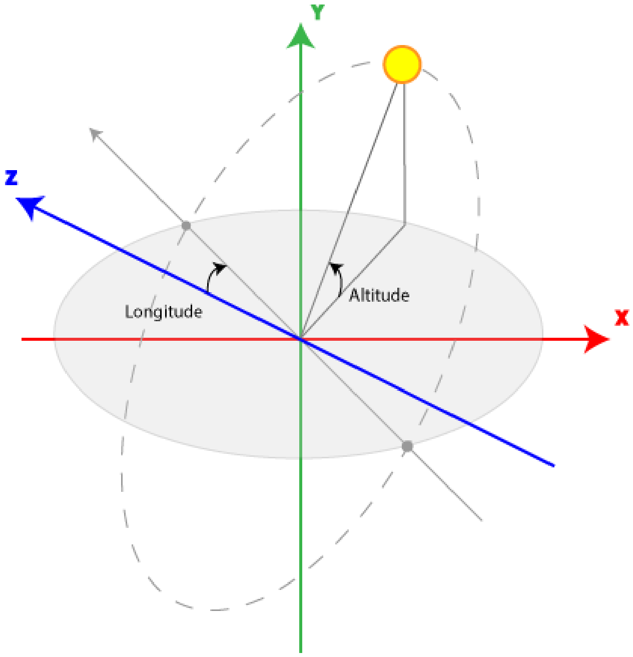
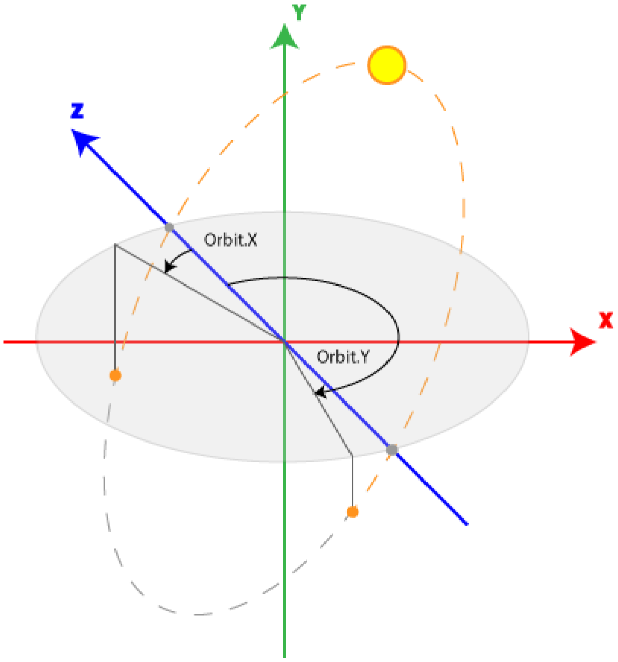

Sun & Moon positioning

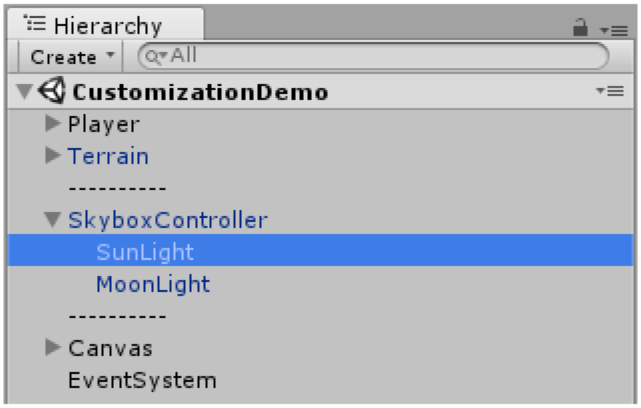
Sun & Moon position settings may seem a bit confusing at first look, so let's try to explain it visually:





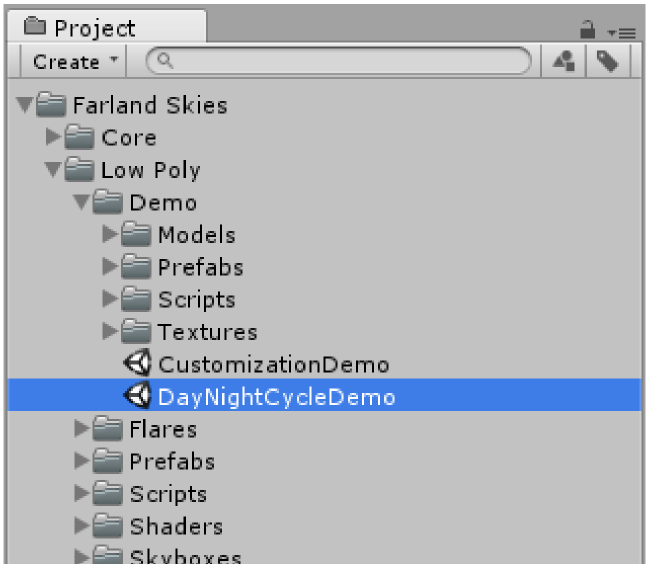
- **Sun Altitude** is the *max* angle between the horizon and the center of sun's disk.
- **Sun Longitude** is the angle between *z-axis* and the center of sun's disk *at sunrise*.
- **Sun Orbit** is a pair of angles that limit visible orbit of the sun.

Also, You can change sun and moon positions just by rotating corresponding direction light objects, under ***SkyboxController*** object.



```
Hierarchy
Create ▾  All
▼ CustomizationDemo
    ▶ Player
    ▶ Terrain
      ----------
    ▼ SkyboxController
          SunLight
          MoonLight
      ----------
    ▶ Canvas
      EventSystem
```

Please take a look at the ***DayNightCycleDemo*** scene to get more details.



```
Project
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              DayNightCycleDemo
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        ▶ Skyboxes
```

Changelog

v 2.3

- Implemented possibility to enable/disable clouds, stars, sun or moon as shader feature
- Added three different types of clouds
- Added three different types of stars
- Added five different types of sun
- Added five different types of moon
- Various optimizations and fixes

v 2.1

- Custom editor for skybox controller
- Custom editor for skybox day-night cycle script
- A number of small optimizations and fixes

v 2.0

- Completely new single-pass shader
- Added procedural sun and moon
- Various optimizations and fixes

v 1.1

- Added stars
- Various performance improvements

v 1.0

- Initial release