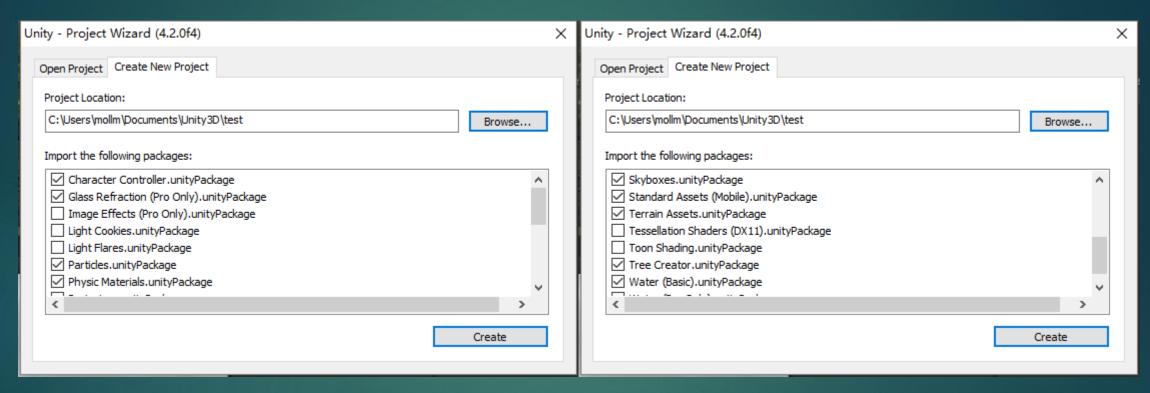
# Unity 3D 实现雨雪雾霾天气模型

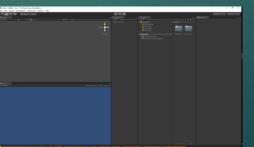
MOLLMY 2016/06/28

### 新建工程,导入以下包:



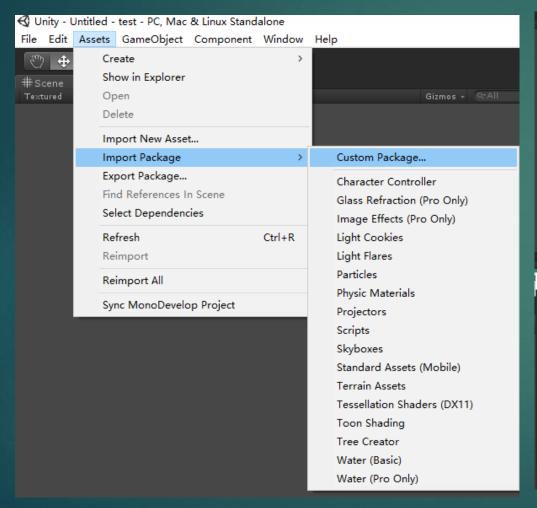
点击create后进入下一页

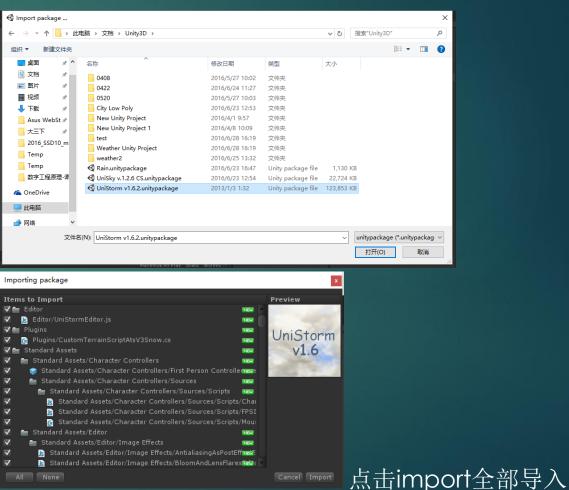




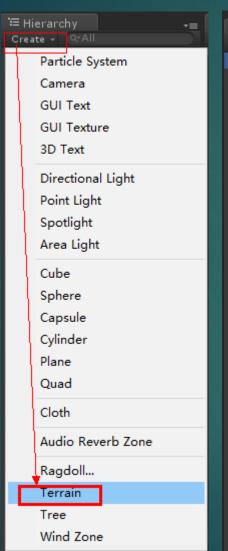
#### 导入uniStorm包:

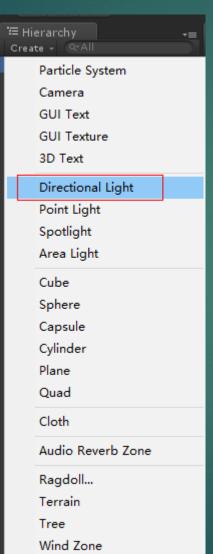
获取包: http://pan.baidu.com/s/1sljAGix 密码: yw5y

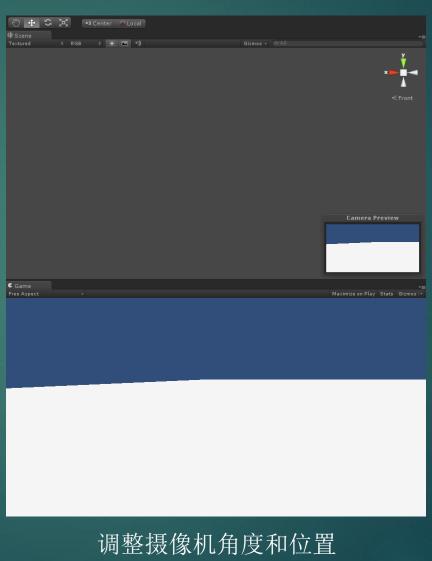




# 创建地形:

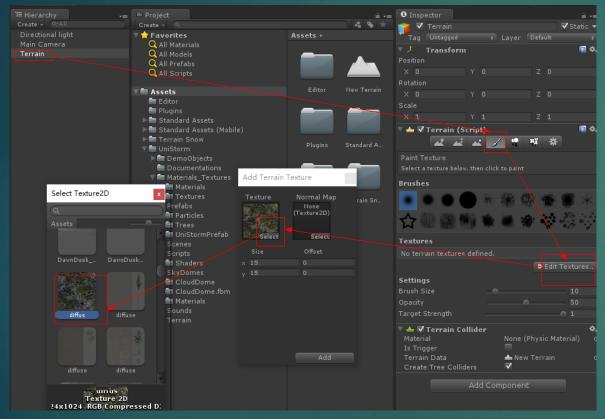


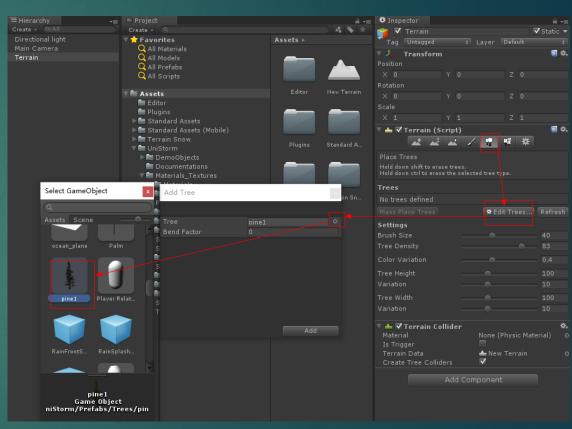




创建平行光

### 添加地形纹理、树木:

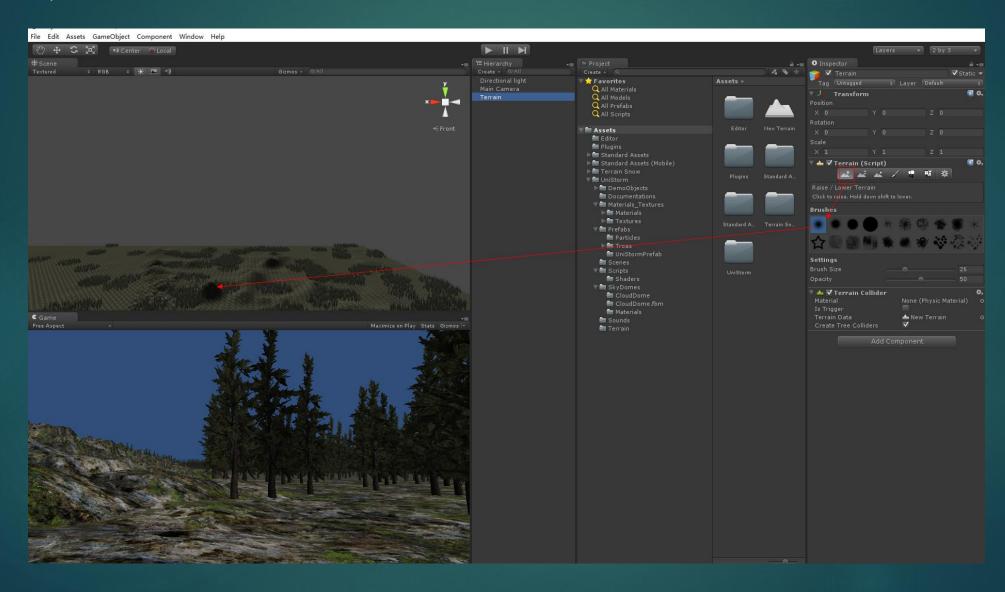




地表纹理

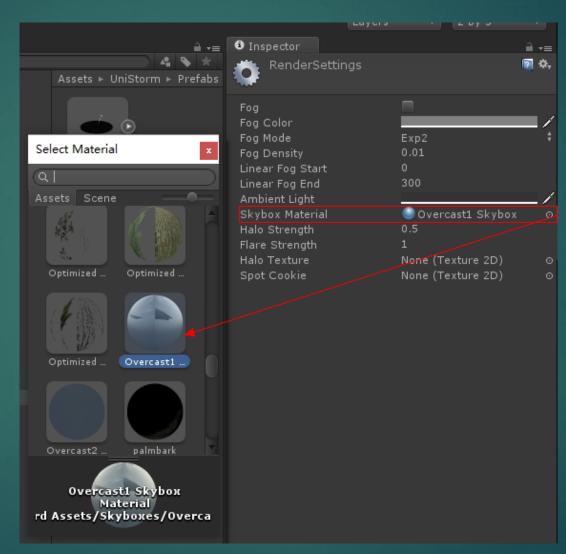
树木

# 添加山丘:



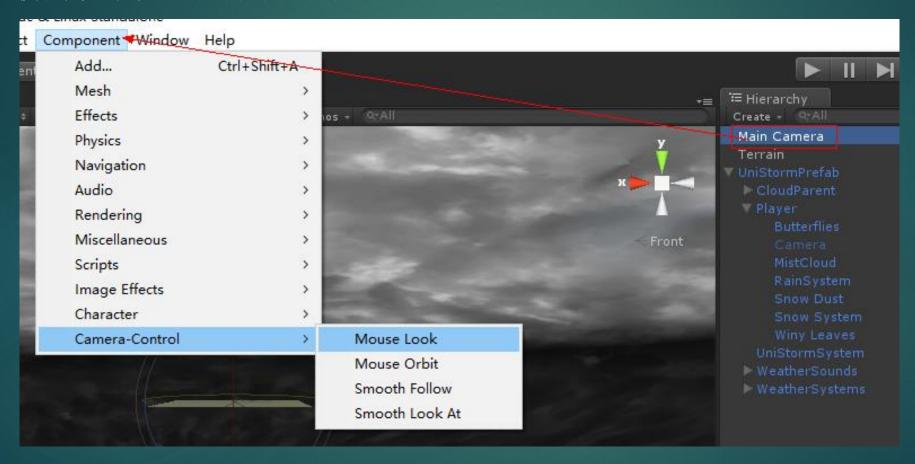
# 添加天空盒子:

Ed	dit	Assets	GameObject	Component	Windo
7		Undo Sel	ection Change	Ctr	l+Z
5		Redo		Ctr	l+Y
1		Cut		Ctr	l+X
		Сору		Ctr	I+C
		Paste		Ctr	l+V
ı		Duplicate		Ctrl	+D
		Delete		Shift+	Del
		Frame Se	lected		F
		Find		Ctr	l+F
		Select All		Ctrl	l+A
ı		Preferenc	es		
		Play		Ctr	l+P
		Pause		Ctrl+Shift	t+P
ı		Step		Ctrl+Al	t+P
ı		Load Sele	ection		>
ı		Save Sele	ction		>
		Project Se	ettings		>
		Render S	ettings		
		Network	Emulation		>
		Graphics	Emulation		>
		Snap Sett	ings		

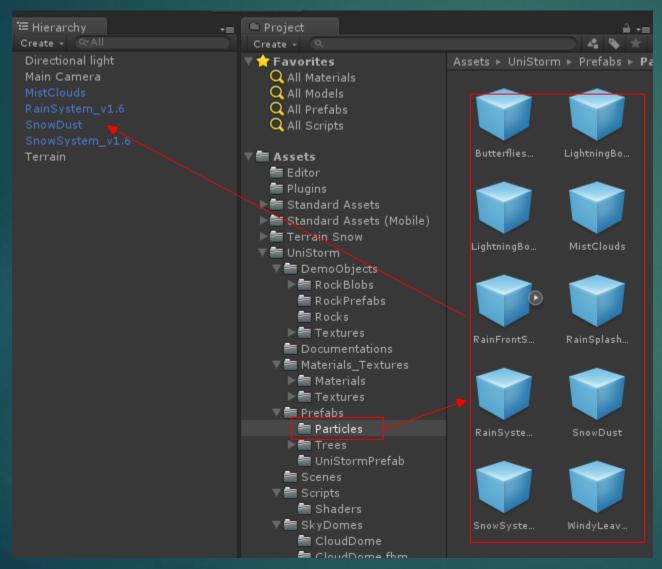


### 给摄像机加MouseLook脚本

使视角可以随鼠标的移动而转换

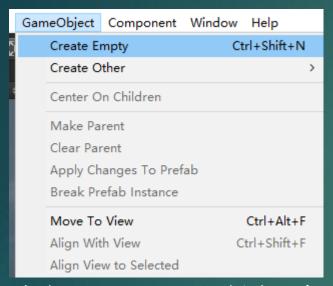


# 加入雨、雪、雾霾预设:

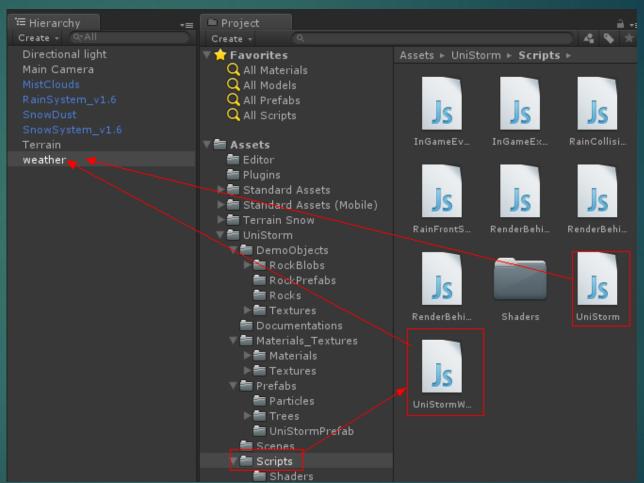


将需要的particles拖入Hierarchy中,左侧 Hierarchy中蓝色项目为雨雪雾霾对象。

#### 创建天气对象:

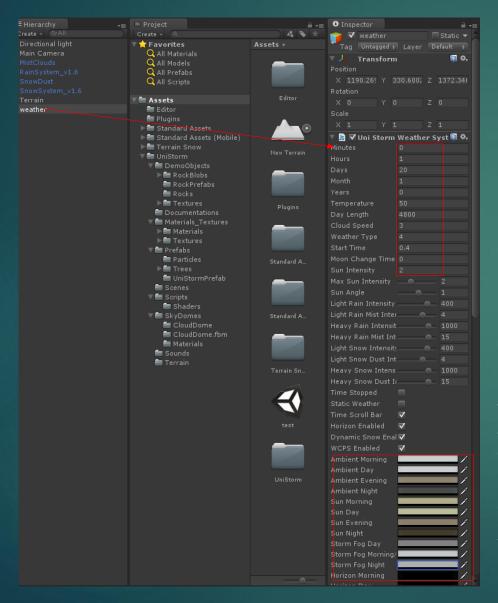


点击Create Empty创建一个 空对象,重命名为Weather。



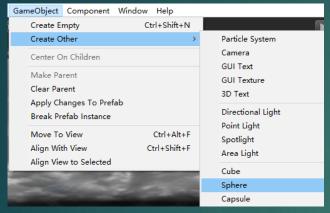
将UniStorm和UniStormSystem两个脚本赋给weather对象。

### 给天气对象赋值:

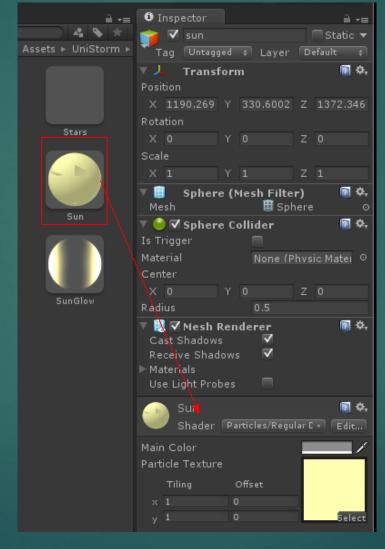


脚本文件中有针对不同时间平行光位于地形的不同位置的设置,所以可以给时间变量赋初始值,还可以选择在场景中显示时间滑动条,滑块的位置代表一天中不同的时间。根据不同天气的实际情况选择不同的颜色,这里大体选择相似颜色,如需要更好的效果需要仔细调色。暂时先给这些变量赋值,接下来添加日、月、云和声音对象后再给后面的变量赋值。

### 添加太阳对象:



创建球体对象,重命名为sun



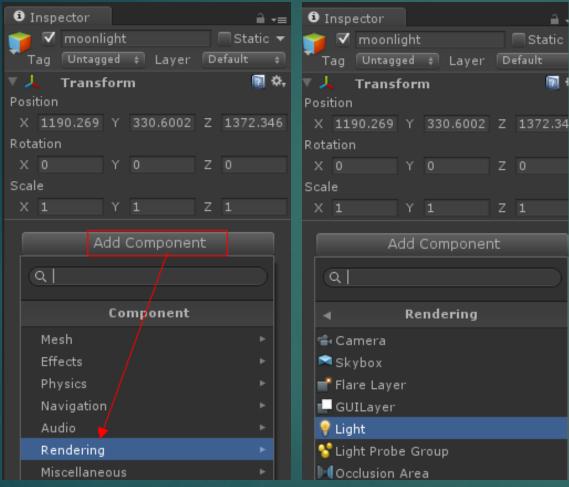
将SkyMaterials文件夹下的Sun素 材赋给sun对象。

类似地——

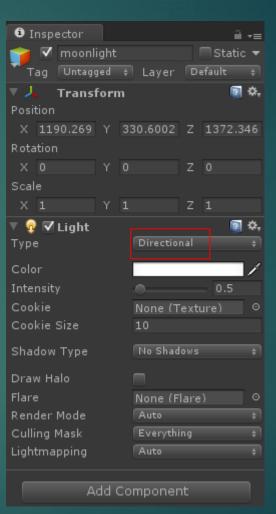
日光对象:新建名为sunglow的球体对象,将SunGlow素材赋给sunglow对象。

月球对象: 创建名为moon的球体对象,将MoonPhasesMaterials文件夹下的MoonPase素材赋给moon对象。

### 添加月光对象:



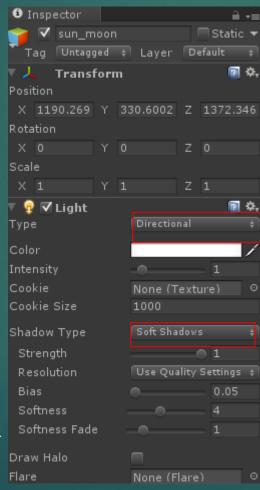
创建空对象,命名为moonlight,在moonlight的 Inspector视图中点击Add Component → Rendering → light



将light的type选择 Directional。

#### 组合日月对象:

组合完成后应仔细调整位置,使滑动时间滑块时,太阳或月亮刚好从摄像机视野范围内经过。



- 新建名为worldaxle的球体对象;
- 将moonlight对象放至moon对象下, 将sunglow对象放至sun对象下;
- 将sun和moon放至worldaxle对象下;
- 将worldaxle放至sun\_moon对象下, 是它们形成下图所示父子关系:

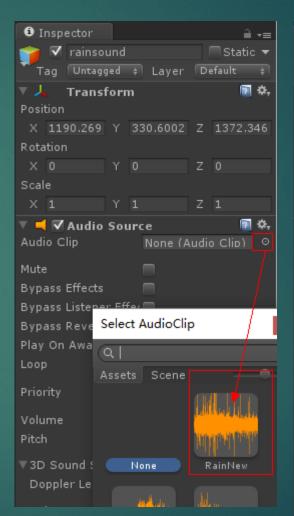


新建名为sun\_moon的空对象,添加light组件并按上图设置

### 添加声音对象:



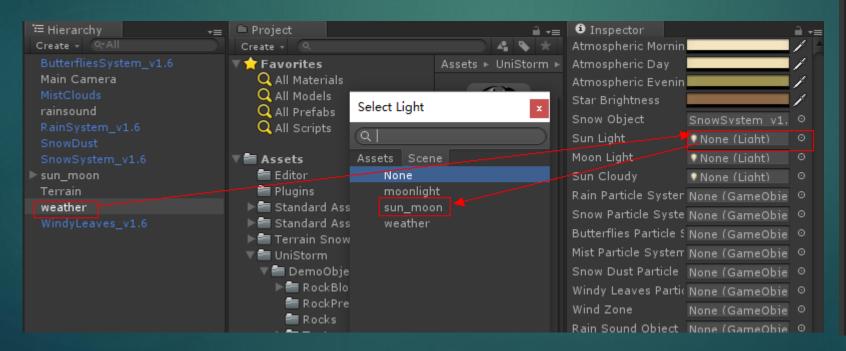
新建空对象,重命名为rainsound,Add Component → Audio → Audio Source 添加声音组件,按右图示添加声音源并设置。 类似地,可添加其他声音对象。



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	d		Static ▼						
Tag Untagged		iyer De							
▼ 🙏 Transfo	rm		₽ \$,						
Position									
X 1190.269 Y 330.6002 Z 1372.346									
Rotation X 0 Y	0								
X 0 Y Scale	U	Z	0						
X 1 Y	1	Z	1						
▼ <mark>◄</mark> ▼ Audio S	ource		₽ \$,						
Audio Clip		<b>●</b> RainNew ⊙							
	Thi	This is a 3D Sound.							
Mute									
	Bypass Effects  Bypass Listener Effec								
Bypass Reverb Z Play On Awake	one 🦳								
Bypass Reverb Z	one 🦳								
Bypass Reverb Z Play On Awake	one 🗌		128						
Bypass Reverb Z Play On Awake Loop	one 🗌	•	128						
Bypass Reverb Z Play On Awake Loop Priority	one 🗌	<u>.</u>							
Bypass Reverb Z Play On Awake Loop Priority Volume Pitch V 3D Sound Settin	one 🗆	•	0						
Bypass Reverb Z Play On Awake Loop Priority Volume Pitch	one 🗆	•	0						
Bypass Reverb Z Play On Awake Loop Priority Volume Pitch V 3D Sound Settin	one 🗆	garithmic f	1						
Bypass Reverb Z Play On Awake Loop Priority Volume Pitch V 3D Sound Settin Doppler Level Volume Rolloff	one V	garithmic f	1						
Bypass Reverb Z Play On Awake	one 🗌								

### 给weather对象的其他变量赋值:

#### 按下图方式初始化各个对象, 完成后如右图所示





### 编辑脚本使符合要求:

```
3978
3979 function OnGUI () {
3980
          if (timeScrollBar == true)
3981
3982
          //Allows a scrolling GUI bar that controls the time of day by the user
3983
          startTime= GUI.HorizontalSlider( Rect(10,5,200,20), startTime, 0,1.0);
3984
3985
3986
              if (commandPromptActive)
3987
3988
                   stringToEdit = GUI.TextField (Rect (10, 430, 40, 20), stringToEdit, 10);
3989
3990
          if(GUI.Button(Rect(10,30,50,30),"雨"))
3991
3992
               monthCounter = 8:
3993
               temperature = 35;
3994
              weatherForecaster = 12;
3995
3996
          if(GUI.Button(Rect(10,65,50,30),"雪"))
3997
3998
               monthCounter = 1;
3999
              temperature = 5;
4000
              weatherForecaster = 3;
4001
4002
          if(GUI.Button(Rect(10,100,50,30),"晴"))
4003
4004
              weatherForecaster = 7;
4005
4006
          if(GUI.Button(Rect(10,135,50,30),"雾霾"))
4007
4008
              weatherForecaster = 1;
4009
4010
4011
4012
```

在UniStormWeatherSystem.js 脚本的OnGUI函数内加红框所 示代码段,以方便我们快速切 换到要求的雨、雪、雾霾天气 模式下。

### 完成

如要更加精致的效果,还需要对各个对象以及场景中的草木进行微调,UniStorm包中有一些地形纹理,可用于在地形上绘制小路,制作湖泊等。可继续增加windsound对象以实现风声音的效果,增加cloud对象以展示在不同天气下天空的云彩变化。时间有限不一一截图介绍。



# 效果展示——雪:



# 效果展示——雨:



# 效果展示——晴:



# 效果展示——雾霾:



# THE END