

# Sol Config

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There is no visible change after changing a parameter of Sol\_Config, because of this:

- The change is not visible while the current time (night or day).
- A custom config of a PPFilter overwrites this parameter.

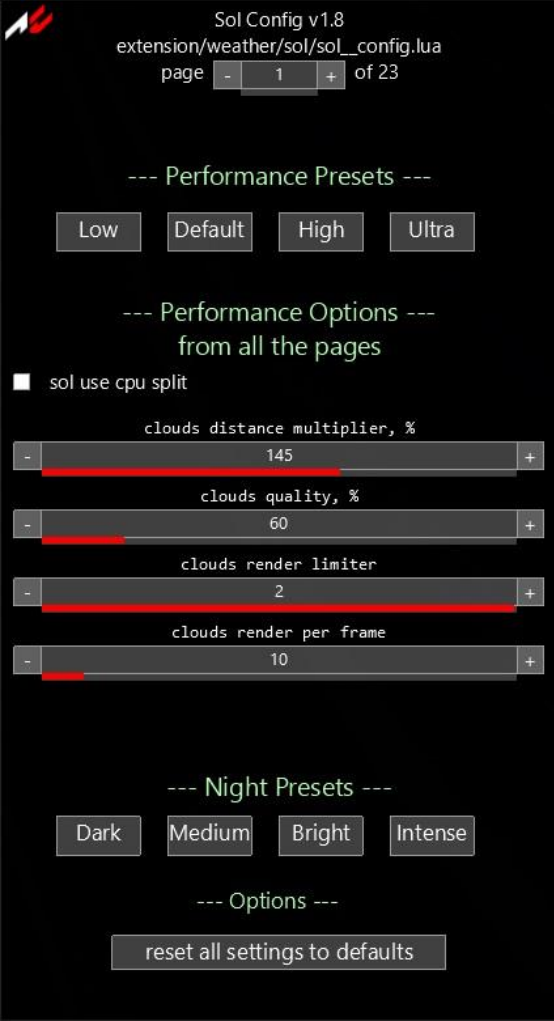
Custom config are scripts, which will be updated every frame.

They can access all Sol\_config parameters.

They are loaded automatically with the PPFilter.

\_\_Sol\_Extra PPFilter overwrites parameter too.

**To be sure to have access to all Sol\_config parameters, change to “\_\_Sol” PPFilter.**



## Performance and Night Presets

Use the 4 **performance preset buttons** to adapt Sol to your needs. “Low” will give you the highest fps. “Ultra” will have a huge impact on fps, but let the clouds look really nice. Those performance presets will change the 5 parameters below. These parameters are from different pages of sol\_config.

Use the **night preset buttons** to adapt Sol’s night look to your taste and need. With the “Dark” preset, you can have a very natural night look, if your monitor is calibrated and/or is able to view the lowest brightness levels.

The night presets adjust these parameters:

- ✓ night\_\_brightness\_adjust
- ✓ night\_\_moonlight\_multiplier
- ✓ night\_\_starlight\_multiplier

Use “Intense” to have a very artificial night look.

### Reset all settings to default

All Sol parameters will get their default values, except the track adaption parameters.



## Performance

`sol__use_cpu_split = false`

If set to true, the calculations of clouds, light and area are separated and sequenced in multiple frames. This will reduce the CPU load. If frame rates are low, you will see the splitted calculations.

## Monitor Compensation

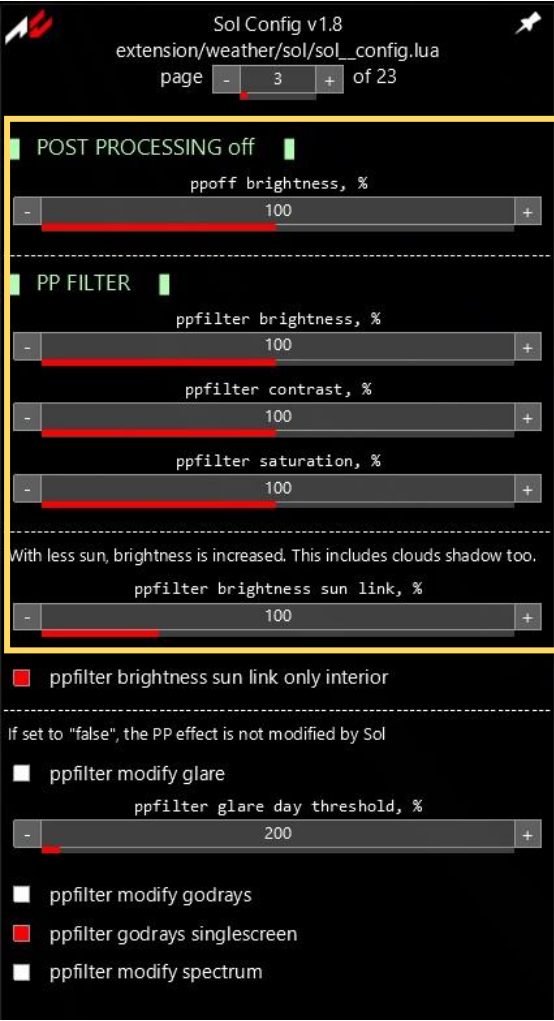
`blacklevel__compensation = 0`

If the settings of your monitor are set wrong, you will not see any details with low color values. Open the [black level chart](#) and make it full-screen. Try to change the settings of your monitor, so you can barely see field 1 or 2. Try to lower contrast a bit to achieve this. If this is not possible, go back to default values. Maybe your monitor is also not able to show detail in that region.

The blacklevel compensation shrinks the color range and lift all values, so the colors are in a practical range.

`colors_whitebalance = 0`

If PostProcessing is used, the overall whitebalance of colors can be adjusted here.



## Post Processing OFF

ppoff\_\_brightness = 1.00

Sol has a full support of "PP off" mode. If PostProcessing is deactivated, Sol has integrated modifiers to achieve post processing like controls.

## PP Filter

ppfilter\_\_brightness = 1.00

ppfilter\_\_contrast = 1.00

ppfilter\_\_saturation = 1.00

You can adjust the 3 main picture settings here. This will not modify the selected PPFilter.

ppfilter\_\_brightness\_sun\_link = 1.00

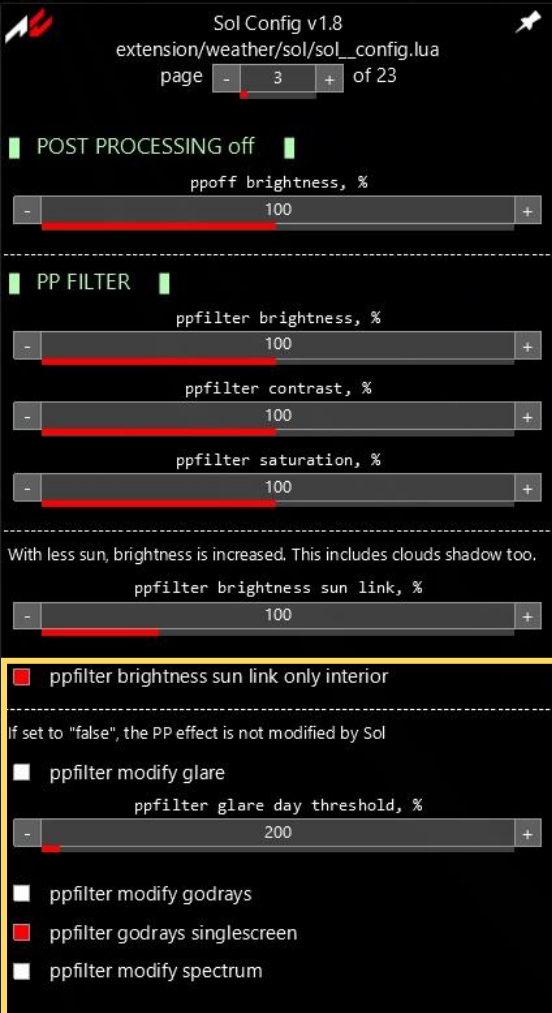
This parameter controls an integrated function, which gains brightness if sunlight decreases. The inputs of this function are sunlight, ambient light, cloud shadow and the overcast modulator. Different to Autoexposure of the PPFilter, this function controls the brightness more static and more stable. It could be described as a control of the needed additional exposure for different light situations.



0.00

1.00

2.00



`ppfilter__brightness_sun_link_only_interior = 1.00`

Just do the brightness control in cockpit views. The brightness with external cams is fixed.

`ppfilter__modify_glare = false`

If activated, Sol controls the glare thresholds of the PPFilter. Mainly they will be lowered in nighttimes, to show camera like effects.

`ppfilter__modify_godrays = false`

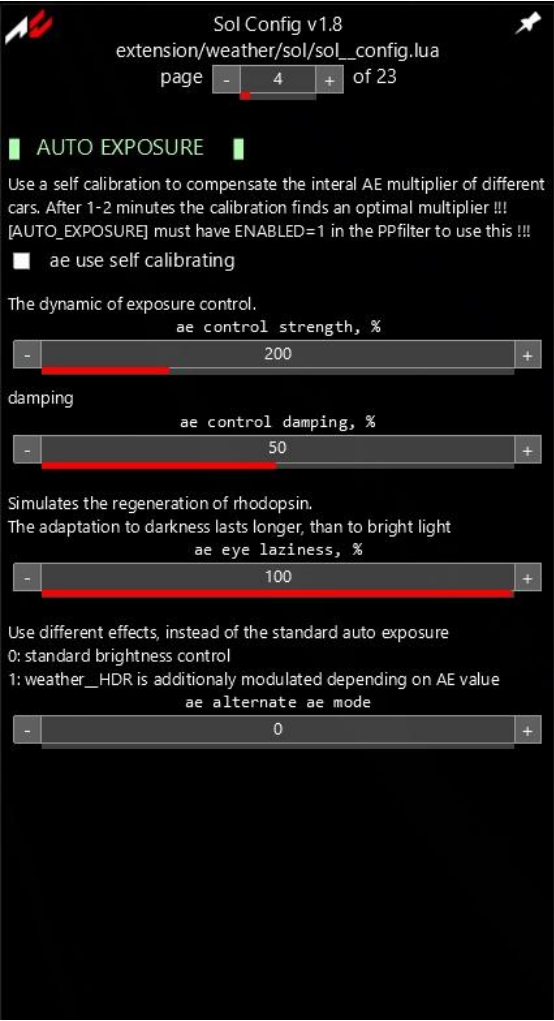
If activated, Sol controls the settings of godrays. Godrays will be lowered for certain weather situations. `ppfilter__modify_godrays` will be activated, if Sun Dazzle Effect is used.

`ppfilter__godrays_singlescreen = true`

If you use triplescreen, deactivate this. This will prevent the double sun glitch.

`ppfilter__modify_spectrum = false`

If activated, Sol will change the color temperature with different inputs, like sunangle or air temperature.



## Auto Exposure

`ae__use_self_calibrating = false`

Use a self calibration method to compensate the internal AE multiplier of different cars. After 1-2 minutes the calibration finds an optimal multiplier. **PPFilter.ini: [AUTO\_EXPOSURE] ENABLED=1**

In AC there is an internal AE multiplier for every car. With this multiplier, the YEBIS (a Post Processing Suite) Auto Exposure (AE) is adapted to the different shapes of the cockpit, because there are different sizes of the visible environment in different cars. E.g., open wheelers have a big area of visible environment or very little in the Mans prototypes. The internal AE multiplier adapts this area and tries to equal the AE for every car - BUT with less success! That's why AE differs much with different cars. To use an averaging over a certain amount of time stabilizes the AE for many cars.

`ae__control_strength = 2.00`

The dynamic of exposure control

`ae__control_damping = 0.50`

Dampening to prevent too fast controlling.

`ae__eye_laziness = 1.00`

Simulates the regeneration of rhodopsin. The adaptation to darkness lasts longer than to bright light.

`ae__alternate_ae_mode`

Activates a different method for Auto Exposure.

`ae__alternate_ae_mode = 0`

YEBIS controls the PPfilter's exposure.

`ae__alternate_ae_mode = 1`

YEBIS control is neutralized and brightness is fixed. The AE value can now be used independently. It is stored in the **weather\_\_HDR** variable. Advanced AE logics can then be realized in a custom config by retrieving this variable: **weather\_\_get\_hdr\_multiplier()**

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CSP Lights

The headlights will be switched on or off with certain ambient light levels, sun angle, fog\_dense levels, or dependent on the weather badness index

headlights if sun angle is under

- 3 +

headlights if ambient light is under, %

- 750 +

headlights if fog dense is over, %

- 70 +

headlights if bad weather, %

- 50 +

If this is activated, CSP lights will appear with sunset and disappear with sunrise. It will also control CSP's new light's fog glow. Set it to false, if you like to use your own control in sol custom config over ac.setWeatherLightsMultiplier(x) and ac.setGlowBrightness(x).

☒ global CSP lights controlled by sol

This multi effects all CSP lights,  
if global\_CSP\_lights\_controlled\_by\_sol is activated

global CSP lights multi, %

- 100 +

## Custom Shaders Patch Lights

The headlights of the AI will be switch on or off, with the following conditions:

headlights\_\_if\_sun\_angle\_is\_under = 3.00

Sun angle

headlights\_\_if\_ambient\_light\_is\_under = 7.50

Ambient light

headlights\_\_if\_fog\_dense\_is\_over = 0.70

Fog dense

headlights\_\_if\_bad\_weather = 0.50

All weather are categorized with a “bad” index. E.g., “Light Rain” has 0.2.

global\_CSP\_lights\_controlled\_by\_sol = true

If this is set to true, Sol controls the brightness of bounced and emissive light. While Day, the brightness should be lower, to prevent visible reflections.

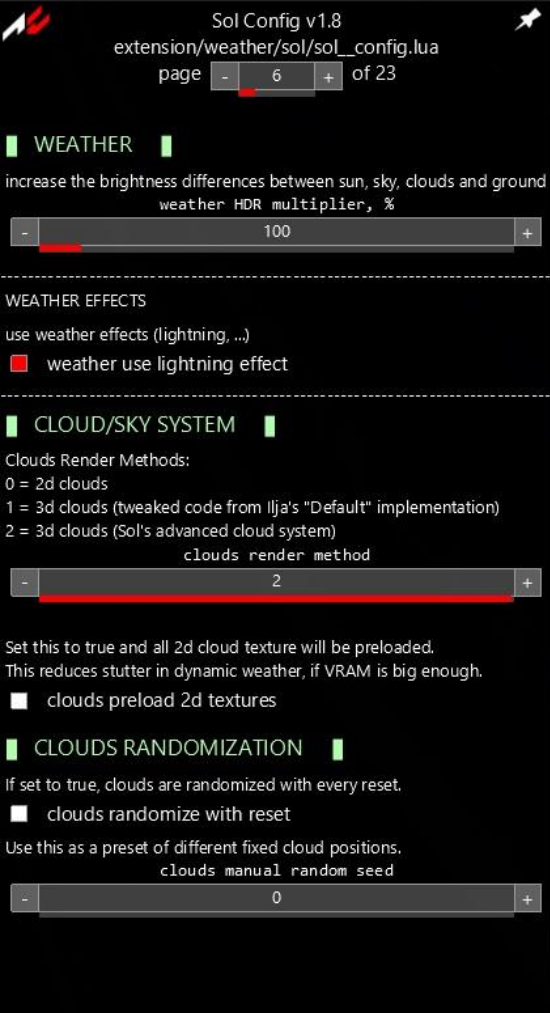


false

true

global\_CSP\_lights\_multi = 1.00

Controls the overall brightness of bounced lights.



## Weather

`weather__HDR_multiplier = 1.00`

If a custom AE method is used in PPFilters/Custom Configs, you can gain the effect here.

`weather__use_lightning_effect = true` Use lightning effects

## Cloud/Sky System

`clouds__render_method = 0` "2d Clouds" called render method:

Pictures of real clouds are used, to create a dome.

`clouds__render_method = 1` This is a customized variant of Ilja Usupov's basic implementation of 3d clouds.

`clouds__render_method = 2` Sol's advanced 3d cloud system:

There a multiple layers of cloud types. Dynamic and static clouds are used, to draw a realistic sky.

`clouds__preload_2d_textures = false`

If 2d clouds are mainly used, set this to true, to prebuffer the cloud's textures in VRAM. This prevents stuttering in weather transitions. Then textures must not be loaded while runtime.

## Clouds Randomizations

Clouds are positioned randomly. You can control this random process.

`clouds__randomize_with_reset = false` If this is set to false, the random seed will be the same for every reset. Clouds randomization is then stable.

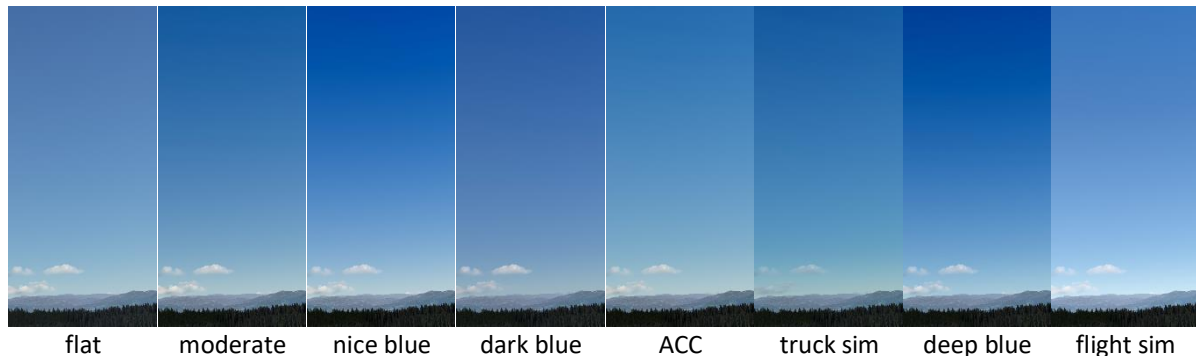
`clouds__manual_random_seed = 0` Choose an individual fixed random seed.



## Sky

```
sky__blue_preset = 1
sky__blue_strength = 1.00
```

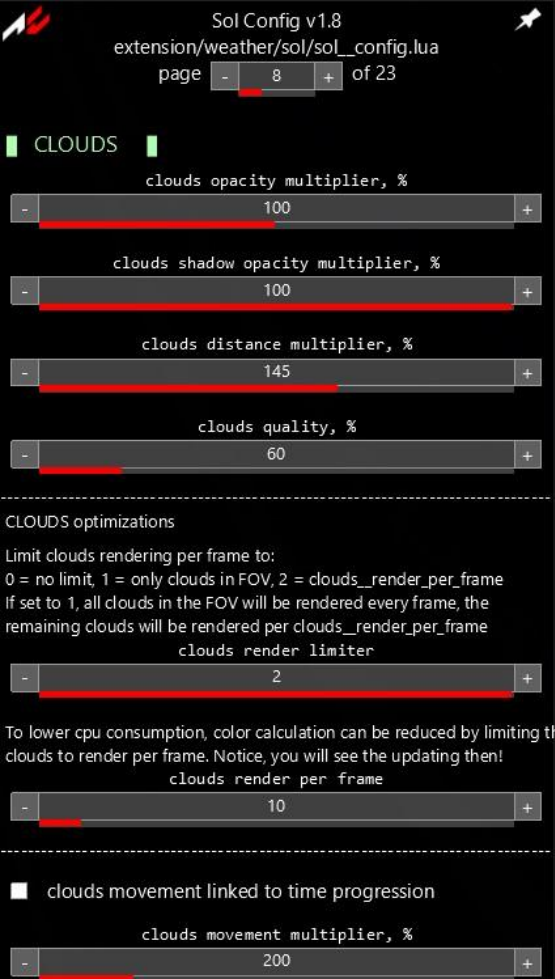
Choose your sky color and gradient. The appearance and feel of a sky, depends much on your own expectations and the settings of your monitor. If you cannot see any differences while changing it, maybe the selected PPfilter has a fixed sky\_\_blue\_preset value. Select the "\_\_Sol" PPfilter, to freely change all parameters. Adjust the richness of "blue" to your liking with sky\_\_blue\_strength.



```
sky__smog = 0.75
```

Sol has its own simulation of smog. Every track has/can have a different setting for smog at morning, noon and evening. Use the sky\_\_smog multiplier, to globally control this effect.

```
day__horizon_glow = 1.00    The colorfulness of the horizon while dusk and dawn.
night__horizon_glow = 1.00  The amount of the horizon's light shimmer in nighttimes.
```



## Clouds

`clouds__opacity_multiplier = 1.00`

The global opacity of clouds (all render methods)

`clouds__shadow_opacity_multiplier = 1.00`

The global cloud shadow opacity  
(all render methods)

`clouds__distance_multiplier = 1.45`

2d Clouds will dim sunlight completely.

A multiplier for the maximum distance, until clouds are rendered. (only for method 2)

`clouds__quality = 0.60`

Clouds are built from multiple textures. The quality mainly controls how many textures are used.

## Clouds optimizations

`clouds__render_limiter = 0`

All clouds are calculated with every frame.

`clouds__render_limiter = 1`

Only visible clouds are calculated every frame, the rest is calculated by the "render per frame" limiter.

`clouds__render_limiter = 2`

Only a certain number of clouds are calculated every frame.

`clouds__render_per_frame = 10`

The maximum number of clouds calculated in a frame (limiter 1 and 2)

`clouds__movement_linked_to_time_progression = false`

If this is true, clouds move faster with higher time progression (only with method 2).

`clouds__movement_multiplier = 2.00`

Set an overall speed multiplier for clouds (only with method 2).

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STELLAR

size of moon and sun

sun size, %

litten atmosphere by the sun

sun sky bloom, %

litten fog by sun

sun fog bloom, %

modify sun reflecting on objects with specular

☒ sun modify speculars

If set to false, the moonlight will not cause shadows.  
This will save gpu consumption.

☒ moon casts shadows

---

Sun Dazzle Effect

ppfilter\_modify\_godrays (page 1) must be activated !

dazzle ratio

sun dazzle mix, %

maximum effect strength





sun dazzle strength, %

the amount of dazzle with sun above 65°

sun dazzle zenith multi

## Stellar

sun\_\_size = 1.00 The Size of moon and sun.

Amount of sunlit atmosphere sun_sky_bloom = 0.63		Amount of sunlit fog sun_fog_bloom = 1.00	
			
0.00		1.00	
			
0.50		1.50	

sun\_modify\_speculars = true

Sol will modify the sun's reflections on the environment.

moon\_casts\_shadows = true

Set this to false to prevent moon is casting shadows. This will save GPU consumption at night.

## Sun Dazzle Effect

The dazzle effect uses the YEBIS godrays. It has its maximum with a sun angle of 10°.

sun\_dazzle\_mix = 0.00

The overall mix of godrays effect.

sun\_dazzle\_strength = 0.50

The length of godrays, resulted in a certain dazzle look.

sun\_dazzle\_zenith\_multi = 0.00

The maximum amount of dazzle with sun angles higher than 20°.



## AMBIENT

ambient sun color balance, %

☐ ambient use directional ambient light

☐ ambient use overcast sky ambient light

ambient AO visibility, %

## NIGHT

seamless blend from night without additional effects to maximum Sol's night effects.

night effects multiplier, %

adjust the ambient brightness from dusk till dawn

night brightness adjust, %

the brightness of the moonlight

night moonlight multiplier, %

the brightness of the stars

night starlight multiplier, %

## Ambient

ambient\_\_sun\_color\_balance = 1.00

This will adjust the saturation of sun and ambient light for daytimes.



0.00



0.50



1.00

ambient\_\_use\_directional\_ambient\_light



false



true

ambient\_\_use\_overcast\_sky\_ambient\_light



false



true

ambient\_\_AO\_visibility = 1.00

The visibility of Ambient Occlusion



0.00



1.00



## AMBIENT

ambient sun color balance, %

- 100 +

☐ ambient use directional ambient light

☐ ambient use overcast sky ambient light

ambient AO visibility, %

- 100 +

## NIGHT

seamless blend from night without additional effects to maximum Sol's night effects.

night effects multiplier, %

- 50 +

adjust the ambient brightness from dusk till dawn

night brightness adjust, %

- 50 +

the brightness of the moonlight

night moonlight multiplier, %

- 100 +

the brightness of the stars

night starlight multiplier, %

- 100 +

## Night

`night__effects_multiplier = 0.50`

This gains various settings, to have a more intense night scenery, like the shining around the moon, its light on the ground the visibility of stars and the YEBIS glare effect.



0.00



0.50



1.00

`night__brightness_adjust= 0.50`

This raises the ambient brightness to have a better visibility. This is an artificial way to also compensate wrong monitor settings.



0.00



1.00



2.00

`night__moonlight_multiplier = 1.00`

Global moonlight multiplier.

`night__starlight_multiplier = 1.00`

Global brightness of the stars.



## NIGHT LIGHT POLLUTION

use light pollution from the lighting ini

☒ nlp use light pollution from track ini

Default night light pollution, when not used from track.

Radius in km

Density

nlp color

## Night Light Pollution

```
nlp__use_light_pollusion_from_track_ini = true
```

Night light pollution will be taken from the track's light ini, if its configured there. If set to false, or light pollution is not configured in the track's light ini, the default pollution is used!

Do light pollution in track inis like this:

```
[LIGHT_POLLUTION]
```

```
RELATIVE_POSITION = 0.76, 0, 0.78 ;position in km relative to the center of the track
```

```
DENSITY = 0.2 ;density of the pollution
```

```
RADIUS_KM = 0.7 ;expansion radius in km
```

```
COLOR = 1.0, 0.55, 0.16 ;the color of the pollution
```

```
ACTIVE = 1
```

Night time pollution is a weatherFX feature, so it is not only in Sol, but the weatherFX implementation must process it.

Default night light pollution:

```
nlp__radius = 5
```

Radius in km

```
nlp__density = 0.50
```

Density of the pollution

```
nlp__color.Hue = 220
```

Hue

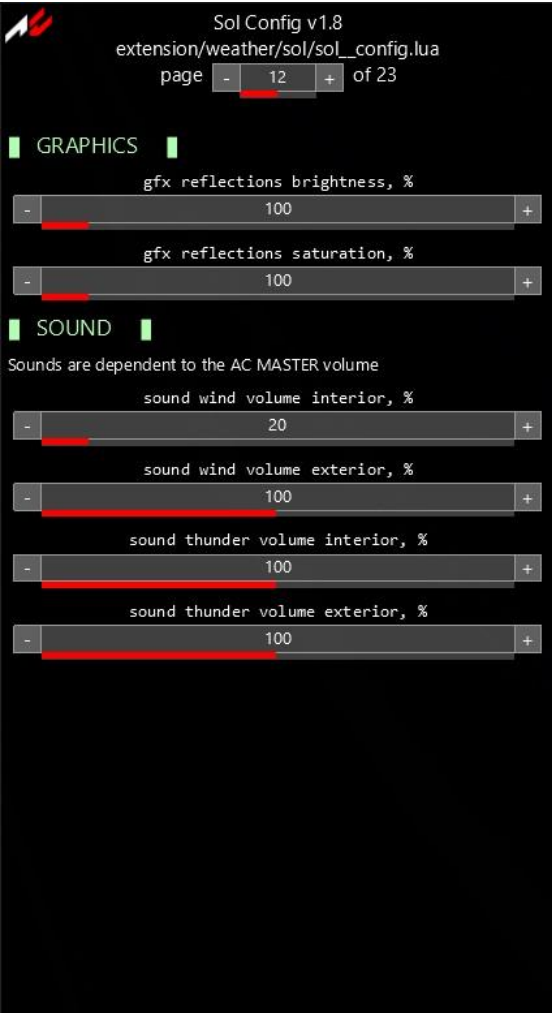
(0 = red, 60 = yellow, 120 = green, 180 = cyan, 240 = blue, 300 = magenta)

```
nlp__color.Saturation = 0.25
```

Saturation

```
nlp__color.Level = 0.10
```

Brightness



## Graphics

```
gfx_reflections_brightness = 1.00  
gfx_reflections_saturation = 1.00
```

This allows you, to have access to the look of CSP's reflections.

## Sound

```
sound_wind_volume_interior = 0.20  
sound_wind_volume_exterior = 1.00  
sound_thunder_volume_interior = 1.00  
sound_thunder_volume_exterior = 1.00
```

Adjust the volume of Sol's sound effects.



## PARTICLES

Particles\_\_quality regulates the lenght of the smoke (spray) and the opacity's decay.

particles quality

Visual adjustments of the particles:

particles brightness multiplier, %

particles saturation multiplier, %

## Particles

This section is only working with old Sol and CSP versions. With the “wet mod”, a tweak to get rain like graphics for track textures by A. Fracasso, it controls the appearance of particles (water spray, mud).

It becomes obsolete with CSP’s rainFX modul.



## Debug Options

Activate debug information of certain parts of Sol.

### DEBUG OPTIONS

☐ sol debug runtime

sun, moon...

☒ sol debug solar system

temperature, wind, ambient light...

☐ sol debug weather

dynamic weather plan

☐ sol debug weather change

weather effects

☐ sol debug weather effects

id, altitude

☐ sol debug track

direction, altitude

☐ sol debug camera

headlights

☐ sol debug AI

shadows

☐ sol debug graphics

custom config

☐ sol debug custom config

Auto exposure

☐ sol debug AE

external light pollution from track's lighting

☐ sol debug light pollution



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## nerd sky adjust

Hue, %	-	100	+
Saturation, %	-	100	+
Level, %	-	100	+
SunIntensityFactor, %	-	100	+
AnisotropicIntensity, %	-	100	+
Density, %	-	100	+
Scale, %	-	100	+
GradientStyle, %	-	100	+
InputYOffset, %	-	0	+

## Nerd Options

Using nerd options in custom configs:

**Do not overwrite tables!!!**

**Access the single members!**

### Sky

```
nerd__sky_adjust.Hue = 1.00
nerd__sky_adjust.Saturation = 1.00
nerd__sky_adjust.Level = 1.00
nerd__sky_adjust.SunIntensityFactor = 1.00
nerd__sky_adjust.AnisotropicIntensity = 1.00
nerd__sky_adjust.Density = 1.00
nerd__sky_adjust.Scale = 1.00
nerd__sky_adjust.GradientStyle = 1.00
nerd__sky_adjust.InputYOffset = 0.00
```



## Light Source

```
nerd__sun_adjust.ls_Hue = 1.00  
nerd__sun_adjust.ls_Saturation = 1.00  
nerd__sun_adjust.ls_Level = 1.00  
  
nerd__sun_adjust.ap_Level = 1.00
```

## Speculars

```
nerd__speculars_adjust.Level = 1.00
```



## nerd clouds adjust

Saturation, %

Saturation limit, %

Lit, %

Contour, %

## Clouds

```
nerd__clouds_adjust.Saturation = 1.00  
nerd__clouds_adjust.Saturation_limit = 0.90  
nerd__clouds_adjust.Lit = 1.00  
nerd__clouds_adjust.Contour = 1.00
```



## nerd ambient adjust

Hue, %

100

Saturation, %

100

Level, %

100

## nerd directional ambient light

Level, %

100

## nerd overcast sky ambient light

Level, %

100

## Ambient

```
nerd__ambient_adjust.Hue = 1.00  
nerd__ambient_adjust.Saturation = 1.00  
nerd__ambient_adjust.Level = 1.00
```

## Directional Ambient Light

```
nerd__directional_ambient_light.Level = 1.00
```

## Overcast Sky Ambientn Light

```
nerd__overcast_sky_ambient_light.Level = 1.00
```



## Custom Distant Fog

```
nerd_fog_custom_distant_fog.distance = 30000
nerd_fog_custom_distant_fog.blend = 0.85
nerd_fog_custom_distant_fog.density = 1.75
nerd_fog_custom_distant_fog.exponent = 0.75
nerd_fog_custom_distant_fog.backlit = 0.05
nerd_fog_custom_distant_fog.sky = 0.00
nerd_fog_custom_distant_fog.night = 0.00

nerd_fog_custom_distant_fog.Hue = 220
nerd_fog_custom_distant_fog.Saturation = 0.50
nerd_fog_custom_distant_fog.Level = 2.50
```



## Moon

```
nerd__moon_adjust.low_Hue = 32
nerd__moon_adjust.low_Saturation = 1.60
nerd__moon_adjust.low_Level = 3.60

nerd__moon_adjust.high_Hue = 210
nerd__moon_adjust.high_Saturation = 0.30
nerd__moon_adjust.high_Level = 2.00

nerd__moon_adjust.mie_Exponent = 15.00
nerd__moon_adjust.mie_Multi = 1.50

nerd__moon_adjust.ambient_ratio = 0.50
```

## Stars

```
nerd__stars_adjust.Saturation = 1.00
nerd__stars_adjust.Exponent = 1.00
```

## nerd moon adjust

-	low Hue	32	+
-	low Saturation, %	160	+
-	low Level, %	360	+
-	high Hue	210	+
-	high Saturation, %	30	+
-	high Level, %	200	+
-	mie Exponent, %	1500	+
-	mie Multi, %	150	+
-	ambient ratio, %	50	+

## nerd stars adjust

-	Saturation, %	100	+
-	Exponent, %	100	+



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## nerd csp lights adjust

bounced day, %

bounced night, %

emissive day, %

emissive night, %

## CSP Lights

```
nerd__csp_lights_adjust.bounced_day = 0.00
```

```
nerd__csp_lights_adjust.bounced_night = 1.00
```

```
nerd__csp_lights_adjust.emissive_day = 0.65
```

```
nerd__csp_lights_adjust.emissive_night = 1.00
```



## --- TRACK ADAPTATIONS ---

## ks\_red\_bull\_ring

This values are track individual values and can be configured in the track's light config. "reset to defaults" has no effect on these values.

## Technical fog (distance fog) adjustments

ta fog level, %

ta fog blend, %

ta fog distance, %

## The angle where sun is faded in/out

ta sun dawn, %

ta sun dusk, %

## The local humidity correction

ta humidity offset, %

## Local smog

ta smog morning, %

ta smog noon, %

ta smog evening, %

## Track Adaptions

All parameters you edit here have no global values, they are bound to the loaded track.

ta\_fog\_level = 1.0

ta\_fog\_blend = 1.0

ta\_fog\_distance = 1.0

With Sol 2.0, those values are multipliers for the distant fog. So only this fog part can be adapted to a track. All other parts like humidity, mist and smog are not influenced.

ta\_sun\_dawn = 1.0

ta\_sun\_dusk = 1.0

These are angles where the sun is faded in/out. Sunlight cover like from mountains can be adapted to this.

ta\_humidity\_offset = 0.5

Set the tracks minimum humidity, to achieve a realistic look of the track, esp. with tracks near the sea. For deserts this should be 0.

ta\_smog\_morning = 0.25

ta\_smog\_noon = 0.35

ta\_smog\_evening = 0.5

Set different average smog values for morning, noon and evening.



`ta_exp_fix` Multiple tweaks are used, to change the basic parameters like sun and ambient light. This function tries to fix overbright textures, too high `ksAmbient` and `ksDiffuse` values of some tracks. Instead of editing many things, often a fix with lower lights is possible. This should be used as a last resort.



1.00



0.78



1.00



0.65

`ta_horizon_offset = 0.0` For some tracks it could be helpful to adapt the height of the horizon, because of a missing distant map or big mountains. Mainly the distant clouds are adapted.

`ta_dome_size = 35000` This mainly adapts the distant fog to the track. Not every track has geometrically correct distant textures. Often a vertical wall is used, to fake a distant area.

`g_ta_spray = 0.98`

Just ignore this parameter, it became obsolete with CSP's rainFX.



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