KERBAL
SPACE PROGRAM

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[1.2.2] Crew Light : An automatic Light manager [1.0] (12 Jan 2017)

[1.2.2] Crew Light : An automatic Light manager [1.0] (12 Jan 2017)

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By Li0n, October 21, 2016 in Add-on Development

● lights   ● plugin

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Li0n
Bottle Rocketeer
●●●●

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Posted October 21, 2016 (edited)   Report post ⌄

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Hi fellow kerbonauts

After years of downloading and enjoying mod from the great KSP community it's time I do something myself, so here it is : **Crew Light**

At the beginning it was a very simple plugin that turn on the light of any part currently occupied by a Kerbal. It works when you jump to an unlighted ship and when you transfer a Kerbal to an unlighted pod / passenger cabin / laboratory.

Now, I like to see it as an automatic light manager, lights are divided in three group with different behavior :

1. Light in crew part, they are automatically toggled when a Kerbal enter/leave the part
2. Light in the Light Action Group, they behave as usual, lighted by clicking the tiny green button or hitting the Light shortcut

3. Others lights*, and lights on kerbal's helmet, will turn on when the sun falls and off when it rises**. And when reaching 20m below the surface**.

For a better experience it also remove the crewable part from the Light action group. So you can turn on the headlight of your rover without your crew cabin going dark. **

Last function : when approaching a vessel its lights will blink, sending you a welcoming message after years of space travel in the dark immensity of space. 🧟**

And as a bonus : Kerbals on EVA can toggle light for every part, except crew-able one.

It should work with every light from every mod but if you find one that don't please report it to me and I'll do what I can to make it work.

* : By default all light belongs to the Light Action Group, if you want them to respond to the sun rise/fall you need to remove them manually during construction or with Action Group Extended in flight

** : Can be disabled/tweaked, more on that below :

Configuration file :

Located in "GameData/CrewLight/PluginData/Settings.cfg", the game has to run once for the file to be created.
Contains the following settings :

> ❯ **Reveal hidden contents**

A great thanks to @Malah for his "Quick Mods" (good code to look at for getting started), all the maintainer of the KSP API and all the modders around here I follow for some time now. And to @Nereid and @Crzyrndm for answering

my noob's questions 🐸

Download from SpaceDock or **GitHub**

This mod bundle a .version file which can be use to check if a new version is available **if** the mod **KSP-AVC** is installed.

Change Log :

> ❯ **Reveal hidden contents**

Source code (also include in the archive at SpaceDock)

License (MIT) :

> ❯ **Reveal hidden contents**

wasml, Nansuchao, Judicator81 and 10 others like this

Crew Light : automatize the lightning of your ship ✕ ▾

Antenna Helper : Math your antenna range and signal strength

Real Time Clock : in-game clock

Diazo
ALL the Actions!
●●●●●

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Posted October 21, 2016   Report post ⤶

For your second question, you can use a Unity feature called a Coroutine to delay running a piece of code. Google has tons of examples and I use it in my code here to do exactly that.

For your first question, I'm not sure there is a good answer due to how KSP packs/unpacks vessels and the physic range limitation. I'm pretty sure that the Part class does has a "number of Kerbals in this part" value to go with the "maximum Kerbals that fit in this part" that I know is

present. Maybe looking at that could help?

D.

Auto Actions: Automatically activate action groups on launch. | ModActions: Control everything (other mods!) via the Action Group system.

Action Groups Extended: 250 Action Groups with in-flight editing. | Vertical Velocity Control: Control your vertical velocity during landing

---

Li0n
Bottle Rocketeer
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Posted October 21, 2016

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@Diazo thanks, I deleted the Update() method and add a StartCoroutine(), at the end of Start(), which wait 0.1s before toggling lights. Looks cleaner 🙈

For the Part class, I found a Part.CrewCapacity which return an int (number of seats in this part) but nothing to check if the part is occupied in this class. (well I find Part.RegisterCrew() and Part.UnRegisterCrew() but no comment on those and monodevelop won't let me use them without the right reference or "using", no idea which one I need...)
Imagining this will work, I'll have to check every part of the vessel to find the one occupied, not sure if it is a good idea with a big ship, performance wise.

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Diazo
ALL the Actions!
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Posted October 21, 2016

Report post

Hmm, Part.CrewCapacity is what I knew was present to give the maximum kerbal capacity, I guess there isn't a Part.CurrentCrewCapacity value that I was hoping for.

If you subscribe to the Part.RegisterCrew() event, does it fire when a vessel unpacks and the kerbal is placed in the part? Or only when the Kerbal actually moves in to the part at lauch/when player commands it?

D.

Li0n
Bottle Rocketeer

Report post

I'm not sure Part.RegisterCrew() is an event, it doesn't return anything (again I'm new to KSP modding...)

I tried this :

```
void OtherVesselLight (Vessel
otherVessel) {
  for (int i = 0 ; i <
otherVessel.parts.Count ; i++) {
    if
(otherVessel.parts[i].CrewCapacity !=
0) {
      otherVessel.parts
[i].RegisterCrew ();
    }
  }
  StartLight (otherVessel);
}
```

Triggered by GameEvents.OnVesselGoOffRails() But nothing appends.

strength

Real Time Clock : in-game clock

Diazo

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2,077 posts

Posted October 21, 2016 (edited)

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Bah, that's what I get for trying to do this on my mobile from memory. Do agree it probably isn't an event.

I'm out of ideas, somewhere in the ProtoKerbal class it does need to save what part the kerbal is in, just a matter of finding it but it seems to be well hidden.

D.

Edited October 21, 2016 by Diazo

Auto Actions: Automatically activate action groups on launch. | **ModActions: Control everything (other mods!) via the Action Group system.**

Action Groups Extended: 250 Action Groups with in-flight editing. | **Vertical Velocity Control: Control your vertical velocity during landing**

Li0n

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Posted October 21, 2016

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There is a ProtoCrewMember.KerbalRef.InPart , this is what I used for the active vessel. But for the distant one KerbalRef == null.
And I haven't found a way to get the part directly from ProtoCrewMember

I'm done for tonight, thanks for the help, I'll continue the investigation later

---

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Posted October 21, 2016

Actually, one thing that might help is to check the Kerbal's saved data in the persistent.sfs file. That's the actual save file so somewhere in that data is the seat the kerbal is in.

D.

Auto Actions: Automatically activate action groups on launch. | ModActions: Control everything (other mods!) via the Action Group system.

Action Groups Extended: 250 Action Groups with in-flight editing. | Vertical Velocity Control: Control your vertical velocity during landing

Gryffyn

Curious George

●●

Members

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6 posts

Posted October 22, 2016

I have a quick question. I downloaded this mod from SpaceDock. I transferred the file from the GameData folder but there is also a CrewLight.cs file that is outside the GameData folder. What do we do with this file? Does it transfer over into the games GameData folder or does it just transfer over to the base KSP folder? Or do we not do anything with it at all? Other than that I am very excited to use this mod! Thank you for your work! 🐸

Li0n

Bottle Rocketeer

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Posted October 22, 2016

@Diazo Thanks for the idea, I m not at home right now but I will check it later.

@Gryffyn The CrewLight.cs is the source code file, you can safely delete it (the license file too). Hope you enjoy the mod.

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Antenna Helper : Math your antenna range and signal

strength

Real Time Clock : in-game clock

Nereid

Mod Developer

●●●●

Members

➕ **682**

1,027 posts

Location: Kiel, Germany

Posted October 22, 2016 (edited)

> **On 10/21/2016 at 2:39 PM, Li0n said:**
>
> Imagining this will work, I'll have to check every part of the vessel to find the one occupied, not sure if it is a good idea with a big ship, performance wise.

It's not. I have made the same mistake in NanoGauges in my first implementations. If you do this, the physics will do strange things with bigger ships. Solution: Scan the vessel ONCE to find all parts that may contain crew. Register a callback for the events that informs you if the vessel was modified and scan again then (or listen just for new/removed parts, if this is possible in KSP 1.2). In the scan a part may still be packed. DO NOT unpack them in the scanning (it will cause other issues). Just register a callback that informs you when its unpacked.

Edited October 22, 2016 by Nereid

TheRagingIrishman likes this

Final Frontier - **NanoGauges** - **S.A.V.E**

Li0n

Bottle Rocketeer

●●●●

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618 posts

Posted October 22, 2016

Well I find a way to illuminate a distant ship :

```
void DistantVesselLight(Vessel
distantVessel) {
        for (int i = 0 ; i <
distantVessel.parts.Count ; i++) {
                if
(distantVessel.parts[i].CrewCapacity >
0) {
                        if
(distantVessel.parts[i].protoPartSnapsh
ot.protoCrewNames.Count > 0) {
                                Light
(distantVessel.parts [i]);
                        }
                }
        }
}
```

Triggered with OnVesselGoOffRails()

As @Nereid says, not a good idea to do this when approaching a huge base/station so I now need a way to store those info. Not sure how to do this, do a check on all vessel when the game starts then create a list of crewed part by ship and update this list when a crew change / a new vessel is lauched etc ?
Should be quick when a ship comes in range but it seems a heavy load at startup for a save with a lot of ship / colony...
I will try this... ...tomorrow...

Crew Light : automatize the lightning of your ship

Antenna Helper : Math your antenna range and signal strength

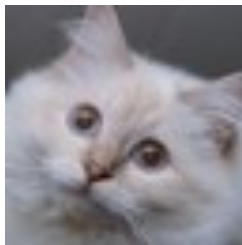**Real Time Clock** : in-game clock

---

Nereid

Mod Developer

●●●●

Posted October 22, 2016 (edited)

> On 10/22/2016 at 5:05 PM, Li0n said:
>
> As @Nereid says, not a good idea to do this when

approaching a huge base/station so I now need a way to store those info. Not sure how to do this, do a check on all vessel when the game starts then create a list of crewed part by ship and update this list when a crew change / a new vessel is lauched etc ?

Should be quick when a ship comes in range but it seems a heavy load at startup for a save with a lot of ship / colony...

I will try this... ...tomorrow...

Or you can add this info to the save with a ScenarioModule that keeps track of all parts with crew capabilities to avoid the scanning at each GameStateCreated event. But this is a bit over the top for something like this...

And a minor improvement to readability:

```
        void DistantVesselLight(Vessel
distantVessel)
        {
        foreach (Part part in
distantVessel.parts) {
            if (part.CrewCapacity >
0) {
                if
(part.protoPartSnapshot.protoCrewNames.
Count > 0) {
                    Light(part);
                }
            }
        }
    }
```

Edited October 22, 2016 by Nereid

Li0n likes this

Final Frontier - NanoGauges - S.A.V.E

Nereid

Mod Developer

●●●●

Report post ⤴

> **On 10/22/2016 at 1:23 AM, Gryffyn said:**
>
> I have a quick question. I downloaded this mod from SpaceDock. I transferred the file from the GameData folder but there is also a CrewLight.cs file that is outside the GameData folder. What do we do with this file? Does it transfer over into the games GameData folder or does it just transfer over to the base KSP folder? Or do we not do anything with it at all? Other than that I am very excited to use this mod! Thank you for your work! 🐵

You do not need this. But all modders must make must have their source code be made publicly available. They can do it by linking to github or somewhere else, or they can include the source in the zip archive of the mod.

Because of this I prefer to include the source in the GameData folder itself and hope this causes no issues with KSP - and that's not the case as far as I'm aware of it. Inexperienced users that do not know what to do, just unpack all files into the GameData folder and get not confused about other files this way. Experienced users may still delete all cs-files by themself...

Final Frontier - NanoGauges - S.A.V.E   ✕ ⌄

Gryffyn

Curious George

●●

Report post ⤴

> **On 10/22/2016 at 9:46 PM, Nereid said:**
>
> You do not need this. But all modders must make must have their source code be made publicly available. They can do it by linking to github or somewhere else, or they can include the source in the zip archive of the mod.
>
> Because of this I prefer to include the source in the GameData folder itself and hope this causes no issues with KSP - and that's not the case as far as

> I'm aware of it. Inexperienced users that do not know what to do, just unpack all files into the GameData folder and get not confused about other files this way. Experienced users may still delete all cs-files by themself...

Thank you very much Nereid! I didn't know cs-file was source code. I was already aware that when installing a mod source code was not needed but I have always seen a source folder, as you described, with other mods I use. Again thank you for educating me on this subject. Just wondering though does cs stand for code-source then? No matter. lol!

Rhedd

Rocketry Enthusiast

●●●

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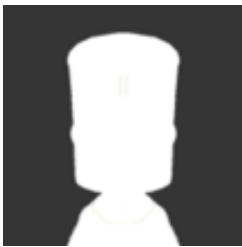
189 posts

Report post

This is SUCH a fun little mod! I get an unreasonable amount of glee out of parts that have lights that turn on and off, and it's very fun to connect it to whether or not anyone's on board.

Thanks!

Edit: One thing though... I tried it and it doesn't seem like the lights go off again when the part is empty. Should they? If not, I hope this is planned.

Edited October 23, 2016 by Rhedd

Li0n likes this

Li0n

Bottle Rocketeer

●●●●

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618 posts

Report post

@Rhedd Very glad you like my little plugin, wait to see the new feature : distant vessel will light as you approach them, looks very cool.

For you request about switching lights off when a crew leave a part, I wasn´t go for it initially but after more testing I agree it will looks cooler 🤢 wait and see...

@Nereid About storing the list of crewed part in the

persistent file, I need to test the time it takes to check all vessel at startup before going the way of writing it in persistent.sfs

For your second point about the clearity of the code, you change the for loop to a foreach, i readed somewhere in the forum that foreach loop shouldn´t be used anymore (since 1.1 ?) not sure it is relevant here
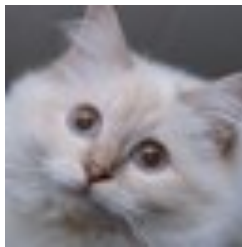
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Real Time Clock : in-game clock

Nereid
Mod Developer
●●●●

Members
➕ **682**
1,027 posts
Location: Kiel, Germany

Posted October 23, 2016   Report post ⤴

> **On 10/23/2016 at 7:44 AM, Li0n said:** ⤴
>
> About storing the list of crewed part in the persistent file, I need to test the time it takes to check all vessel at startup before going the way of writing it in persistent.sfs
>
> For your second point about the clearity of the code, you change the for loop to a foreach, i readed somewhere in the forum that foreach loop shouldn´t be used anymore (since 1.1 ?) not sure it is relevant here

Any source of this? Because using a regular for on a list is ugly as hell.

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Crzyrndm
Capsule Communicator
●●●●●

Posted October 23, 2016 (edited)   Report post ⤴

No longer an issue (and was only ever an issue if using Unity Editor to compile if I understood correctly)

Nereid likes this

My Mods: **Pilot**
Assistant   **Filter**
Extensions   **The Plugin**
Workshop
Supported Mods: Procedural Wings

Li0n
Bottle Rocketeer
● ● ● ●

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Posted October 23, 2016

@Nereid @Crzyrndm Thanks for the reply. I will also change the other for loops.

I was trying to do things right but foreach will be more clearer. Thanks.

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Li0n
Bottle Rocketeer
● ● ● ●

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Posted October 23, 2016

Update 0.3 : Kerbals are ecologist

> **Quote**
>
> Code cleanup, thanks to @Nereid
> Kerbals now turn lights off when they leave theirs pod

Crew Light : automatize the lightning of your ship

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Boomerang
Sr. Spacecraft Engineer

●●●
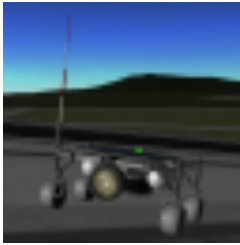
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Posted October 25, 2016   Report post

I'm really loving the immersion-factor of this!

I've noticed briefly though that at least the Inline Command Pod from Near Future Spacecraft doesn't function. And the config does contain:

> **Quote**
>
> MODULE
>   {
>   name = ModuleAnimateGeneric
>   animationName = InlineCommandPod-Windows
>   startEventGUIName = Lights On
>   endEventGUIName = Lights Off
>   }

Li0n likes this

Li0n
Bottle Rocketeer

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Posted October 25, 2016   Report post

@Boomerang glad you like it and thanks for the report I download NF and look into it.

Boomerang likes this

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Li0n

Posted October 25, 2016   Report post

Bottle Rocketeer

●●●●

@Boomerang done, available on spacedock.

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CobaltWolf

Legalize Ranch

●●●●●

Posted October 25, 2016   Report post ◀

Sounds very neat! I always forget to turn the lights on/off.

🧟

Li0n and TimothyC like this

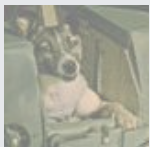**BDB BLUEDOG DESIGN BUREAU**
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