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[1.6.X] Surface Experiment Pack - Deployable science for KIS/KAS! (v2.7 - 13/Jan/19)

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By CobaltWolf, January 21, 2017 in Add-on Releases

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Posted January 21, 2017 (edited)

[Report post](#)

Legalize Ranch

•••••

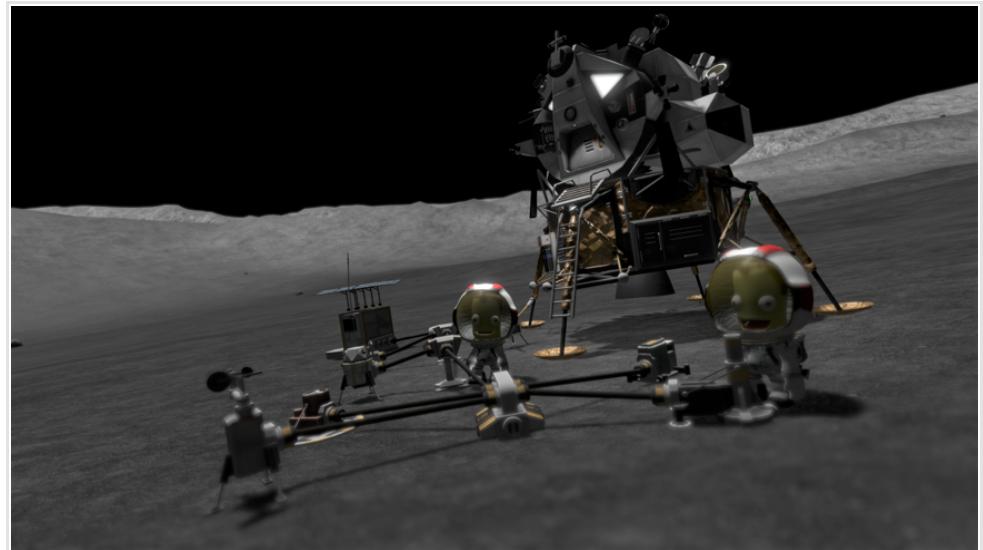
Members

16,980

5,556 posts

Location: probably working on
BDB

PLEASE READ THIS
POST FOR
INFORMATION ON
THE FUTURE OF THE
MOD



SEP v2.7.1



This is a continuation of the mod originally created by [@AlbertKermin](#), and now co-authored by him, myself, and [@DMagic](#). I'm merely starting a new thread so that I (as a more active user) can maintain the thread as needed. SEP now runs on a custom science plugin, allowing much more complex science over time.

(See the next post for more images!)

Changelog:

Reveal hidden contents

Mod Support:

This mod has custom science definitions for [CaptRobau's](#) wonderful [Outer Planets Mod](#).

This mod has custom science definitions for [KillAshley's](#) [New Horizons Pack](#).

[@Nils277](#) has made a [Central Station wedge](#) for use with his [Kerbal Planetary Base Systems](#) mod. Run a SEP off your ground base!

[RemoteTech](#) compatible (requires Module Manager)

AntennaRange compatible (requires Module Manager)

Dependencies:

KospY + IgorZ's wonderful [Kerbal Inventory System](#)/[Kerbal Attachment System](#).

Credits:

- **AlbertKermin**, for creating the original MSEP mod, helping create the original SEP mod, and contributing sciencedefs for the current iteration.
- **CobaltWolf**, for creating the new models and parts used in the mod.
- **DMagic** for creating the new plugin on which the science system runs.
- **KospY**, for the [Kerbal Attachment System](#) mod without which my mod could not exist.
- **Vaga**, who created the RemoteTech compatibility patch.
- **Kerbas_ad_astra**, who created the AntennaRange patch.
- **Beale**, whose solar panel texture we used (with permission).
- **Enceos**, for his amazing help with converting the original mod to use [KIS](#).
- **JefferyCor**, for advice on repairing one of this mod's more troublesome bugs.
- **Dunrana** for helping write the Science definitions, testing, and generally getting me back to work on the mod.

Shameless plug:

Need a lander to carry your SEP down to the surface? Like a fine wine, SEP pairs excellently with [Bluedog Design Bureau](#) - which includes a stockalike version of the LEM lander!

License:

This work is presented under a Simplified BSD license.



Art assets used in Surface Experiment Pack were made by [Matthew \(CobaltWolf\) Mlodzienksi](#) and are licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#). All credit for the wonderful new textures/models/artwork goes to CobaltWolf, who retains the copyright to his work.

All source files for the mod, including uncompiled textures and models, are available upon request.

We back boys!

Edited Sunday at 10:19 AM by CobaltWolf

+ Quote

minepagan, TimothyC, Wjolcz and 26 others like this



The image shows the Bluedog Design Bureau logo, featuring a large blue 'BDB' monogram and the text 'BLUEDOG DESIGN BUREAU' and 'Stockalike Historical Rockets'. Below the logo are two menu items: 'Rocket Manual' (Payloads and Lifters) and 'BDB Roadmap' (Plans and Progress).

DMagic

Capsule Communicator

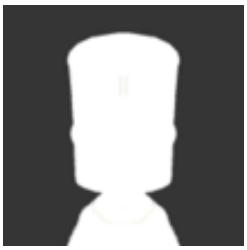


Posted January 21, 2017 (edited)

Report post

The newest version of Surface Experiment Package provides several experiments that gather data over time and require skilled scientists to set them up.

Experiments in the [VAB/SPH](#) give information about the



Members

+ 3,866

4,051 posts

complexity of the instrument, and standard time required to collect all data.

The screenshot shows the SEP-MT3 Surface Magnetometer experiment setup. The experiment is described as follows:

SEP-MT3 Surface Magnetometer

Mass: 0.05 t
Crash Tolerance: 80.0 m/s
Max. Temp. Int/Skin: 2000/2000 K
80.3 cm

Manufacturer: Albert Kermin Labs and BDB

After Jeb noticed that his compass didn't work properly in high Kerbin orbit - almost resulting in a navigational disaster - we began researching how compasses work, and why they work differently on different planets. This experiment is guaranteed to tell you whether you can trust your compass on a planet.

Cost: ⚡ 1000.00 [RMB]: Pin, Less

SEPScience Experiment

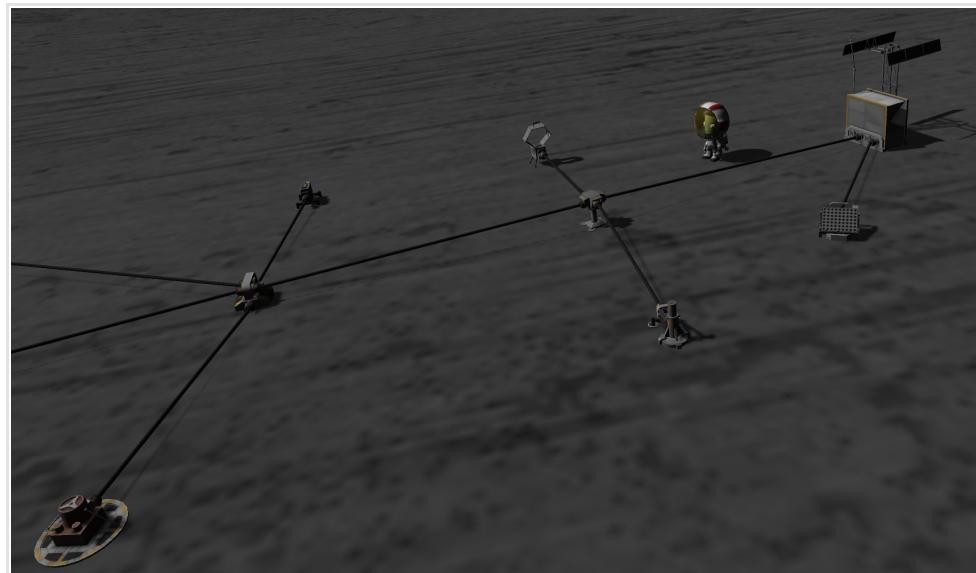
Measure Magnetic Field

Can Transmit: ✓
Transmission: 100 %
Experiment Complexity: 3
Std. Time To Completion: 90 Days

Requires:

- Electric Charge: 4.5/min.

Start by unpacking experiments from your KIS inventory and attaching them with an engineer. Everything must be connected to an SEP Central Station, either directly or through any of the several extenders provided. No more explosions please 😬 (but really, the problem seems to have been fixed, but if anything blows up, particularly when attaching the connection plugs, please report it).



Once everything is hooked up use a scientist (other classes can also be used with a penalty to the experiment setup) to calibrate each experiment.



- All experiments have a Complexity value, this represents the level of scientist required to calibrate that experiment to 100%
- Each level above or below the Complexity value will affect the calibration level by 25%
 - A level 1 scientist will calibrate an experiment with a complexity of 2 to 75%
 - Level 3 will result in a 125% calibration, etc...
 - Experiments cannot be activated with less than 50% calibration
- Calibration level affects both the time required for data collection and the maximum amount of science that can be gathered
 - All experiments have three levels, basic, detailed and exhaustive
 - These level give 50%, 75%, and 100%, respectively, of the max available science
 - The values are not additive, completing the basic experiment means that only the remaining 50% can be gathered from subsequent data

Control and monitor all connected experiments from the Central Station.



- All data can be collected from the individual instruments, or all at once from the Central Station
- Data collection is processed in the background for all unloaded vessels
 - Background processing is not continuous, it occurs at intervals of every few hours
 - Limited EC consumption is modeled, but nothing is actually consumed as long as some type of power generator is on the station
- The station provides a short-range, direct antenna and a probe control point
 - CommNet connection strength also affects data collection time
 - Above 50% connection there is a boost, below there is a penalty

Data can be collected and transmitted using standard methods, or transmitted automatically.



- Data that is kept will automatically be transferred to the Kerbal
- This data set represents the Detailed, second level of results (above 75% completion, but below 100%)
 - The basic results will have a lower total science value, the exhaustive, higher
 - Returning these results will account for all data from the basic results and 75% of the data for the exhaustive results
- An upgrade to the Central Station can be unlocked later in the tech tree allowing for automatic transmission
 - Automatic transmission can occur in the background or for an active vessel

Monitor and control all experiments through the included UI.



- All experiments are listed for each vessel, along with vessel location and connection status
- Experiment status is indicated with the green slider
 - The dark green background represents the calibration level, from 0-100%
 - The light green foreground represents data collection percentage
- The time remaining until the next data set is ready is indicated to the right
- All experiments can be paused or restarted at any time
- Automatic data transmission can be toggle with the green radio button
- A few alternate modes are available for the UI
 - A slightly more compact window is available that only shows one SEP setup at a time
 - Another version of the main window shows all SEP vessel at the same time
 - The standard version separates the view by celestial body
- The window scale and view options can be change in the SEP section of the stock settings panel

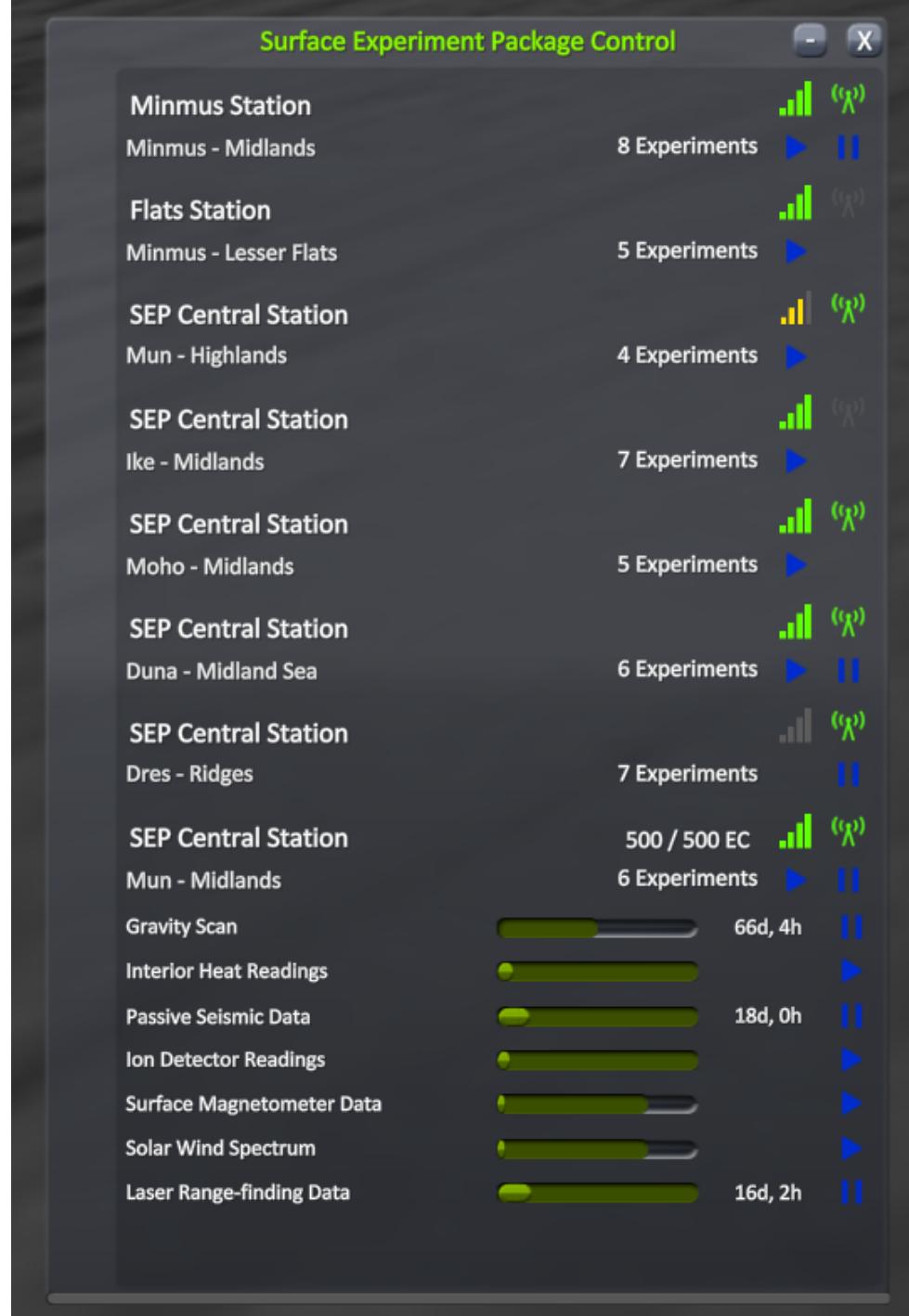
Compact window (toggle on and off with the +/- button in the top right):



Celestial Body selection:



All vessel view:



Future versions will have a KSPedia entry with a more succinct overview of how everything works. For now, if there are any questions about how things work, bug reports, or suggestions, please comment here, or leave a GitHub issue.

Edited January 21, 2017 by DMagic

+ Quote

Geonovast, Daishi, blu3wolf and 12 others like this



A thing I made 



DMagic Addons: [DMagic Orbital Science](#) | [Modlets](#) | [Basic Mods](#) | [Evolved Mods](#)

Contract Addons: [Contracts Window +](#) | [Contract Reward](#)

Enceos

Fluffy Engineer



Members

+ 1,705

2,090 posts

Location: SPH rooftop

Posted January 23, 2017

Report post



That's a jewel of science mods

Does it come with any contracts?



Quote

[Kerbal Hacks](#) (Procedural Part textures, Asphalt Tiles,Unusual parts, other hacks) | [Wearable KIS](#)[Props](#) (Customize your Kerbals)[Animated Station Screens](#) (Let visitors know what your station offers) | [Droptank "Wrapper"](#) (Some extra fuel**blu3wolf**

Spacecraft Engineer



Members

+ 86

488 posts

Location: Western Australia

Posted January 23, 2017

Report post



That looks fantastic. How does RemoteTech compatibility go? RT disables CommNet. Does SEP still work under that condition?



Quote



Per Ardua Ad Astra.

Speed is Life. Altitude is Life Insurance.

To make the houses smaller, pull back on the stick. To make them first smaller, then suddenly bigger and bigger, pull back sharply on the stick...

CobaltWolf

Legalize Ranch



Posted January 23, 2017

Report post



On 1/23/2017 at 3:30 AM, Enceos said:



That's a jewel of science mods

Does it come with any contracts?

Members

+ 16,980

5,556 posts

Location: probably working on
BDB

I believe there was one at some point. It wasn't included in the mod though.

On 1/23/2017 at 2:21 PM, blu3wolf said:

That looks fantastic. How does RemoteTech compatibility go? RT disables CommNet. Does SEP still work under that condition?

There is a RemoteTech compatibility file but I don't know if its outdated. There is only one part that would need a transmitter, so it should be an easy fix if it's not working.



Quote

blu3wolf and TimothyC like this



Rocket Manual

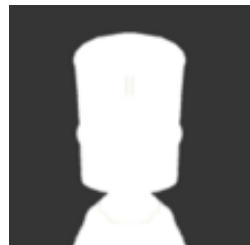
Payloads and Lifters

BDB Roadmap

Plans and Progress

doktorstick

Rocketeer



Members

+ 7

35 posts

Posted January 23, 2017 (edited)

Report post



Howdy. I have a couple of questions.

- I'm inferring from one of DMagic's screenshots that it makes sense to have a setup in each biome. Is this correct? For instance, I've set one up at Kerbin Shores and one at Kerbin's Ice Caps. Does each give its own science output? Are there diminishing returns?
- If you double or treble the **same** science devices connected to a SEP station, does it speed up the process, give you more science, doesn't help at all?
- If you setup two SEP stations in the same biome--with or without duplicate experiments--do you get more science?
- What happens when a data set is ready, but you don't collect/transmit it? Does it pause until it's empty? If not, what happens if a second data set because ready and the first hasn't been collected

yet?

Thanks.

Edited January 23, 2017 by doktorstick

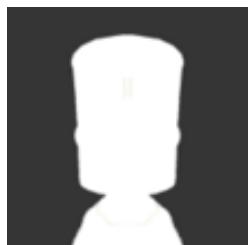


Quote



DMagic

Capsule Communicator



Members

+ 3,866

4,051 posts

Posted January 23, 2017

Report post



For RT I think a MM patch is needed to make the antennas work right. The only interaction SEP has with CommNet is in determining the data gathering rate, better connections make the data collect faster, but with RT it will just ignore that calculation.

@doktorstick

I wouldn't waste too much time setting up stations on Kerbin, it's quite a lot to setup, and if you don't have any high level scientists you won't even get the max science out of each experiment. I would imagine one or maybe two setups on the Mun or Minmus would give more science than all of Kerbin's biomes.

1. All the experiments are biome-sensitive, they give new data sets for each biome, each with the same value.

2/3. More stations doesn't affect collection rate or science value, it's mostly just a waste of time setting them up. If one station had an experiment calibrated to a higher level then it would collect more data, faster, but it would be better to re-calibrate an existing setup, rather than making a new one.

4. Nothing, once a data set is ready it will sit in the instrument until a Kerbal picks it up or transmits it; once you unlock the SEP Central Station upgrade from the tech tree you can set experiments to be automatically transmitted when ready.

If the experiment isn't finished yet (the "basic" data set is ready, but the experiment is calibrated to a level allowing for the next data set as well), then the first data set will stay in the instrument until the next is ready. Subsequent

data sets replace any existing sets, but this has no affect on the total amount of science available, it all comes from a single pool for each experiment for a particular planet and biome. The KSPedia entry goes over this, though it might not be completely clear.



Quote

blu3wolf likes this



[A thing I made](#) 😊



DMagic Addons: [DMagic Orbital Science](#) | [Modlets](#) | [Basic Mods](#) | [Evolved Mods](#)

Contract Addons: [Contracts Window +](#) | [Contract Reward Modifier](#) | [CapCom](#)

Starslinger999

Black Hole enthusiast



Members

+ 164

413 posts

Location: Gargantua

Posted January 24, 2017

Report post



I heard that only some experiments work in space/in atmosphere.

Which one is which?



Quote



AlbertKermin

Spacecraft Engineer



Members

Posted January 25, 2017

Report post



The magnetometer, retro-reflector, seismic sensor and heat probe will work anywhere.

The CCID scanner and Solar wind Spectorometer will only work on planets without an atmosphere.

The weather station will only work on planets with an atmosphere.

+ 178

234 posts



Quote



Surface Experiment Pack- adding ALSEP to KSP!



MiniMods: [\[KAS Aerobraking Shield\]](#)

[\[Mini Sample Return Capsule\]](#)

My KSP-inspired science-fiction novella: [\[On Titan- Air\]](#)

CobaltWolf

Legalize Ranch



Members

+ 16,980

5,556 posts

Location: probably working on
BDB

Posted January 25, 2017

Report post



▼ On 1/24/2017 at 10:48 PM, Starslinger999 said:



I heard that only some experiments work in space/in atmosphere.

Which one is which?

▼ On 1/25/2017 at 2:00 AM, AlbertKermin said:



The magnetometer, retro-reflector, seismic sensor and heat probe will work anywhere.

The CCID scanner and Solar wind Spectorometer will only work on planets without an atmosphere.

The weather station will only work on planets with an atmosphere.

Quoting to make sure [@Starslinger999](#) sees the reply.



Quote

AlbertKermin and TimothyC like this



BDB BLUEDOG DESIGN BUREAU
Stockalike Historical Rockets

Rocket Manual

Payloads and Lifters

BDB Roadmap

Plans and Progress

blu3wolf

Spacecraft Engineer



Members

+ 86

488 posts

Location: Western Australia

Posted January 25, 2017

Report post

Dammit, I really want to try this out now... you guys realise this mods incarnations has been on my essentials list for a while. Cant start a new career without it, level essential.

Only reason Im browsing forums instead of setting up some experiments is another essential mod has not updated 

 Quote



Per Ardua Ad Astra. 

Speed is Life. Altitude is Life Insurance.

To make the houses smaller, pull back on the stick. To make them first smaller, then suddenly bigger and bigger, pull back sharply on the stick...

Starslinger999

Black Hole enthusiast



Members

+ 164

413 posts

Location: Gargantua

Posted January 25, 2017

Report post

 On 1/25/2017 at 2:28 AM, CobaltWolf said: 

Quoting to make sure  @Starslinger999 sees the reply. 

 On 1/25/2017 at 2:00 AM, AlbertKermin said: 

The magnetometer, retro-reflector, seismic sensor and heat probe will work anywhere.

The CCID scanner and Solar wind Spectrometer will only work on planets without an atmosphere.

The weather station will only work on planets with an atmosphere.

Thank you for the Help! My Duna mission is now Fully Operational.





Quote

blu3wolf and AlbertKermin like this



X

CobaltWolf

Legalize Ranch



Members

+ 16,980

5,556 posts

Location: probably working on
BDB

Posted January 25, 2017

Report post



On 1/25/2017 at 6:22 AM, blu3wolf said:



Dammit, I really want to try this out now... you guys realise this mods incarnations has been on my essentials list for a while. Cant start a new career without it, level essential.

Only reason Im browsing forums instead of setting up some experiments is another essential mod has not updated 😞

???

Are we missing a dependency?



Quote

TimothyC likes this



X

[Rocket Manual](#)

Payloads and Lifters

[BDB Roadmap](#)

Plans and Progress

doktorstick

Rocketeer



Posted January 25, 2017

Report post



On 1/25/2017 at 1:04 PM, CobaltWolf said:





Members

+ 7

35 posts

Are we missing a dependency?

He (@blu3wolf) must be referring to another mod altogether, based on my reading. I've been using SEP for a while, albeit only on Kerbin because I haven't landed on another celestial body yet. 😊



Quote



blu3wolf

Spacecraft Engineer



Members

+ 86

488 posts

Location: Western Australia

Posted January 26, 2017

Report post



On 1/25/2017 at 1:04 PM, CobaltWolf said:



???

Are we missing a dependency?

@doktorstick has the right of it. For me, FAR is just as essential as SEP, so until that updates, I can't try out your otherwise excellent mod 😊



Quote



Per Ardua Ad Astra.

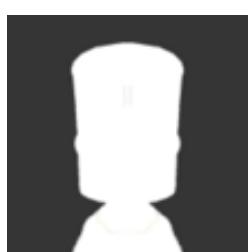


Speed is Life. Altitude is Life Insurance.

To make the houses smaller, pull back on the stick. To make them first smaller, then suddenly bigger and bigger, pull back sharply on the stick...

seaces

Rocketry Enthusiast



Members

Posted January 28, 2017 (edited)

Report post



First landing on Duna in this save and I have set up my SEP research station. Experiments started and finished their research. As the time for Duna-Kerbin windows is closing in, I EVA scientist to gather the data and look what I see on the review of the data. I got 0 science from all experiments. Why is that? I had run the experiments once on the Mun and went all fine.

+ 10

143 posts

Forget it. I have solved it

Edited January 28, 2017 by seaces



Quote



garwel

Veteran KSP newbie



Members

+ 438

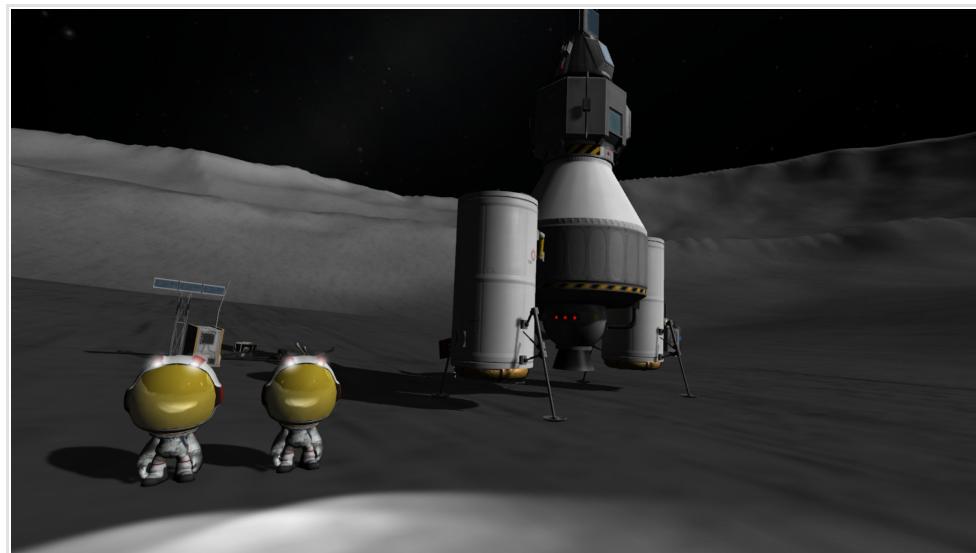
782 posts

Posted January 31, 2017

Report post



I love the way this mod allows my kerbals to actually *do* something once they've landed instead of just "run all experiments - put a flag - take surface sample - take off". Bill and Bob are sending their thanks from the Mun!



Do you think there might be added something to make sense staying near the experiments longer and/or coming back later? Like gathering additional data that can't be transferred. I use life support mods, so I don't see a point right now to monitor the SEP experiments.



Quote



[Kerbal Health](#) | [Space Age](#) | [Signal Delay](#) | [Timekeeper](#) | [Urgent Contracts](#)



Ginlucks

Rocketeer

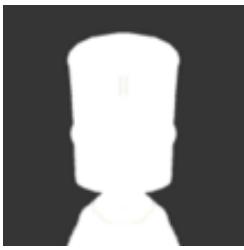


Posted February 4, 2017

Report post



Hi Guys. Somebody know why I cant link aki power conduit to central station? I attached it to central station but then it doesnt display me the link option



Quote



Members

+ 6

48 posts

Merkov

Sr. Spacecraft Engineer



Members

+ 280

460 posts

Posted February 4, 2017

Report post



On 2/4/2017 at 2:52 PM, Ginlucks said:



Hi Guys. Somebody know why I cant link aki power conduit to central station? I attached it to central station but then it doesnt display me the link option

Just a shot in the dark here, but do you have the old KAS installed (that is, not the newer beta version)?



Quote



narvster

Rocketeer



Members

+ 23

26 posts

Posted February 5, 2017 (edited)

Report post



On 2/4/2017 at 3:07 PM, Merkov said:



Just a shot in the dark here, but do you have the old KAS installed (that is, not the newer beta version)?

I've the December 27 2016 KAS installed, I'm assuming there's a problem as I have the same issue. I'm unable to find the AKI Power Transfer Conduit anywhere in the VAB parts list. I can see the files in the folder structure, so it sounds like there might be some conflict perhaps?

Do you have a link to the Beta version of KAS as I'm unable to find it?

I might have found it, is it the newer version/rewrite of KAS? If so you can find it here:

<https://github.com/ihsoft/KAS/releases/>

I'll give it a try and see if it works.

Edited February 5, 2017 by narvster

Added in the link to KAS Beta

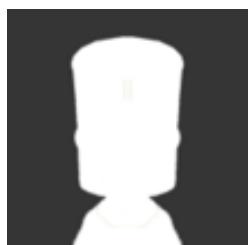


Quote



Ginlucks

Rocketeer



Members



48 posts

Posted February 5, 2017

Report post



On 2/4/2017 at 3:07 PM, Merkov said:



Just a shot in the dark here, but do you have the old KAS installed (that is, not the newer beta version)?

KAS 1.4.1 doesn't work. Let me try with beta lined by Narvster



Quote



narvster

Rocketeer



Members



26 posts

Posted February 5, 2017

Report post



OK, I've removed KAS 0.63 from my save game (I had to remove any KAS parts from my ships, luckily only a couple) and I added in the new KAS 0.73 beta and it made no difference, the Power Conduit plug still isn't visible in the VAB. I'm not sure what's going on with this part now, any ideas are welcome!



Quote



blu3wolf

Spacecraft Engineer



Posted February 6, 2017

Report post



On 1/31/2017 at 7:32 PM, garwel said:



Do you think there might be added something to make sense staying near the experiments longer and/or coming back later? Like gathering additional

Members
+ 86
488 posts
Location: Western Australia

data that can't be transferred. I use life support mods, so I don't see a point right now to monitor the SEP experiments.

Yes. Id move the automatic transmission deeper into the science tree. Ive unlocked it already before constructing a single SEP buildout, as ive been doing probe missions to the mun/minmus. Next two missions are mun probe missions, then the next program is a manned mission, probably to the Mun. SEP is going to come in handy for that!

+ Quote



Per Ardua Ad Astra. X ▾

Speed is Life. Altitude is Life Insurance.

To make the houses smaller, pull back on the stick. To make them first smaller, then suddenly bigger and bigger, pull back sharply on the stick...

CobaltWolf

Legalize Ranch



Members
+ 16,980
5,556 posts
Location: probably working on
BDB

Posted February 6, 2017

Report post



On 2/6/2017 at 2:27 AM, blu3wolf said:



Yes. Id move the automatic transmission deeper into the science tree. Ive unlocked it already before constructing a single SEP buildout, as ive been doing probe missions to the mun/minmus. Next two missions are mun probe missions, then the next program is a manned mission, probably to the Mun. SEP is going to come in handy for that!

In my defense, the stock tree / science progression is crap and it's way easier to land a lot of hopper probes and not land until later, whereas IRL we essentially shot straight for the moon.

@everyone I really don't know what's going on with KAS; I haven't even started up the game in a couple months now. Busy busy busy.



Quote

TimothyC likes this

[Rocket Manual](#)

Payloads and Lifters

[BDB Roadmap](#)

Plans and Progress

blu3wolf

Spacecraft Engineer



Members

86

488 posts

Location: Western Australia

Posted February 6, 2017

Report post



On 2/6/2017 at 3:56 AM, CobaltWolf said:



In my defense, the stock tree / science progression is crap and it's way easier to land a lot of hopper probes and not land until later, whereas IRL we essentially shot straight for the moon.

@everyone I really don't know what's going on with KAS; I haven't even started up the game in a couple months now. Busy busy busy.

Obviously you are free to balance your mod as you see fit, no defense necessary! Im using CTT, but I dont think that makes massive changes to how things work. I personally dont think KSP career needs to mirror the real world one - the system is different, the parts are different, and the progression too is different.

Im looking forward to testing the SEP stuff, hopefully I will not be able to reproduce the issues with KAS.



Quote



Per Ardua Ad Astra.



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[1.6.X] Surface Experiment Pack - Deployable science for KIS/KAS! (v2.7 - 13/Jan/19)

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