

Kerbal Space Program - Bug #5234

craft losing alignment

07/13/2015 10:05 AM - Sigma88

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|------------------------|-----------|---------------------|--------------|
| Status: | Not a Bug | Start date: | 07/13/2015 |
| Severity: | Normal | % Done: | 0% |
| Assignee: | | | |
| Category: | Physics | | |
| Target version: | | | |
| Version: | 1.0.4 | Language: | English (US) |
| Platform: | Win32 | Mod Related: | No |
| Expansion: | | | |

Description

Setup:
Win32, KSP 1.0.4, No Mods Installed
brand new download (never played on it before)

Issue:

Once achieved orbit with a craft, if the orbit is not high enough the craft will not maintain it's orientation in space. If the orbit is high enough the issue does not present itself.

How to reproduce:

- 1 - take any craft to a 78km orbit around kerbin in KSP 1.0.4
- 2 - make it an equatorial orbit with as little eccentricity as possible
- 3 - point the craft to any star in the skybox
- 4 - time warp a few seconds
- 5 - the craft is no longer pointing to the same star

This is not an issue linked to SAS, it seems to be a switch in frame of reference that occurs at ~100km

This can be noticed by having an highly eccentric orbit with Pe at 78km and Ap at 150/200 km

the screenshot provided were taken at 50x time warp, the second screenshot was taken 3 real life seconds after the first.

you can see that the craft rotates relative to the blue star on top of the "tail fin"

this issue was already confirmed by other users on the forum:

link <http://forum.kerbalspaceprogram.com/threads/128497>

History

#1 - 07/13/2015 11:39 AM - Kasuha

The game uses two reference frames: universal reference frame above 100 km (in Kerbin case, it differs for other bodies), and rotational reference frame below 100 km. Reason for this is to prevent alignment problems with ships landed on surface or sliding/flying near the surface - rotating a 600 km radius planet below a ship that is just a few meters above its surface would come with major arithmetic rounding problems. Thus the planet is stationary and the only thing that moves is the ship (and the whole universe).

While in rotational reference frame, the ship's orientation stays constant relative to that reference frame - i.e. in case of Kerbin, it is fixed relative to the planet's surface or KSC and in 6 hours it will make a 360 degrees turn relative to the universe. It is most obvious in drift your ship experiences if you set up a maneuver at the opposite side of your low orbit, point the ship at that maneuver and time warp to get close to that maneuver.

Should probably be fixed in the long run.

#2 - 07/13/2015 11:45 AM - Sigma88

Thanks for the details,

May I ask which parameter is used to set the altitude of the reference frame switch?

It may be useful for mods that add custom planets. I am not sure if I can ask this here, if I can't let me know so I'll remove the question

thanks again for your time

Sigma

#3 - 07/13/2015 02:49 PM - Kasuha

Sigma88 wrote:

May I ask which parameter is used to set the altitude of the reference frame switch?

Sorry, I have no idea. There does not seem to be a cfg file with these parameters. I believe people who design mods with custom planets have these things researched.

#4 - 07/13/2015 03:47 PM - Sigma88

Kasuha wrote:

Sigma88 wrote:

May I ask which parameter is used to set the altitude of the reference frame switch?

Sorry, I have no idea. There does not seem to be a cfg file with these parameters. I believe people who design mods with custom planets have these things researched.

I'll take the issue to them then.

Thank you for the support!

#5 - 08/07/2015 08:21 PM - RexKramer

- *Status changed from New to Not a Bug*

- *% Done changed from 0 to 100*

Marking as Not a Bug, per the postings above.

Files

| | | | |
|------------------------------------|--------|------------|---------|
| Screenshot 2015-07-12 23.24.29.png | 433 KB | 07/13/2015 | Sigma88 |
| Screenshot 2015-07-12 23.24.32.png | 425 KB | 07/13/2015 | Sigma88 |