```
1  # Help
2
3  Main variables:
4
5  Name | Description
6  -----|------------
7  Mechanics Timestep         | The time in seconds that acceleration is assumed
   to be constant for. Set higher for faster simulation, lower for more accurate
   simulation
8  Planetary Radii Multiplier | The factor by which the size of bodies are
   multiplied when drawn to the screen. (At real size, most planets cannot be
   seen)
9  Orbit Trail Length         | The length of the trails of each body, as a
   number of timesteps
10
11 Below are descriptions of the various orbital elements you can change
12
13 Name | Description | Symbol | Range
14 -----|-------------|--------|-------
15 Semi-latus rectum               | the distance between two bodies at right
   angles to the “periapsis” (minimum point) | ρ | [0,+∞)
16 Eccentricity                    | A measure of the shape of the orbit,
   illustrated below                                | e | [0,+∞)
17 Inclination                     | the angle between the orbital plane and the
   reference plane                        | i | \[0,180\]
18 Longitude of the ascending node | the angle from the reference direction
   anticlockwise to the point where the orbiting body rises above the reference
   plane | Ω | [0,360)
19 Argument of periapsis           | the angle from the ascending node
   anticlockwise to the periapsis.                  | ω | [0,360)
20 True anomaly                    | the angle from the periapsis anticlockwise
   to the current position of the body.    | ν | [0,360)
21
22 The best way to understand how these work is to modify the variables of an
   existing system. For each body you can also edit its name and which planet it
   is orbiting. If it is set to not be orbiting any planet, the orbital elements
   will be ignored and it will be placed at the origin with 0 velocity.
23
24 ### Eccentricity/Semi-latus rectum:
25
26 ![eccentricity](help/eccentricity.jpg "Eccentricity")
27
28 ### Existing Systems
29
30 There are several existing systems to try:
31
32 Name                       | Description
33 --------------------------|------------
34 Standard                   | Our solar system
35 Inner                      | The inner 4 planets of our solar system
36 EccentricityDemo           | A demonstration of how eccentricity affects
   orbits, as shown above
37 RoguePlanet1/RoguePlanet2 | Two examples of the effects of a rogue planet
   entering our solar system
38 SuperJupiterEarth          | An example of three body mechanics, with earth
   orbiting a planet much more massive than jupiter
39 Binary                     | A binary star system, showing non-Keplerian
   orbital mechanics
40
41 ### In Simulation Controls:
42
43 Control     | Effect
44 ------------|------------
45 Esc         | Pause and edit variables
46 L           | camera lock
47 R           | Reset camera
```

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48   F           | Change camera focus
49   C           | Toggle stereoscopic camera
50   P           | Pause
51   Mouse       | Move Camera
52   Scroll      | Zoom
53   Up/Down     | Increase/Decrease planetary radii multiplier
54   Right/Left  | Increase/Decrease mechanics timestep
55   PgUp/PgDown | Increase/Decrease orbit trail length
```