Experiment Methodology

The purpose of this experiment is to empirically differentiate Relativity and Gravitational Flow. Currently, all experimental evidence that stands in support of Relativity, also stands in support of Gravitational Flow. This experiment was chosen because the results predicted by the two theories are in direct opposition. They will either come out in support of Relativity, thereby refuting Gravitational Flow, or they will come out in support of Gravitational Flow, thereby refuting Relativity.

The experiment involves measuring the amount of drift a beam of light experiences when it is traveling transverse to the direction of "the flow." Gravitational Flow posits that gravity is a flow, and that the rate (velocity) of the flow at any given location is given by the corresponding escape velocity at that location. As such, the velocity of the flow at Earth's surface is approximately 11,181 m/s. The logic and math for calculating time dilation is considerably more simple and straightforward than with Relativity, but the results are no less accurate. (See vixra.org/abs/1503.0053 for detailed examples.)

Pursuant to Gravitational Flow, a laser beam oriented horizontally (parallel with Earth's surface) will drift (be pushed) downward as it travels away from the emitter, according to the following:

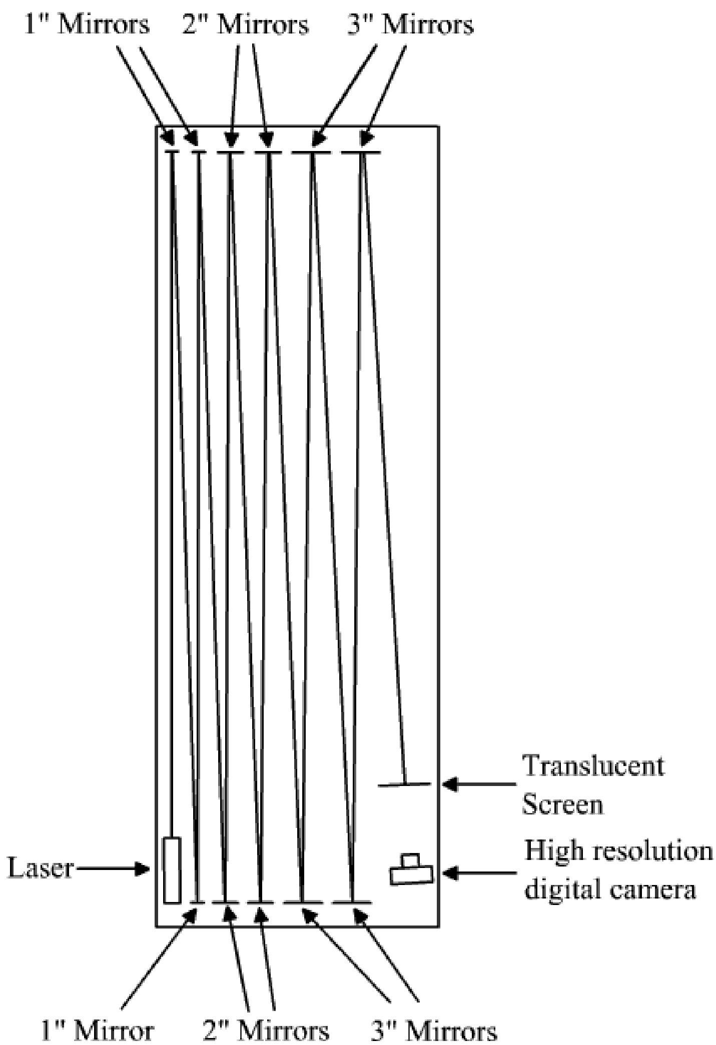
Horizontal speed of the laser beam (c): 299,792,458 m/s

Vertical (downward) speed of the flow at Earth's surface (v): 11,181 m/s

Amount of downward drift over a 26.8125 meter horizontal length of beam travel: v / c * 26.8125 meters = 1 millimeter

The amount of drift is tiny, and it's highly unlikely that anyone would notice it - unless they were specifically looking for it. But since the mainstream of the physics world is steeped in Relativity, and Relativity says that gravity and light just don't work this way, nobody would bother to actually look for it.

The device components will be fitted on a 2' x 8' rigid surface, reinforced along its edges to prevent flexing. The laser would be fixed at one corner and aimed along the length of its adjacent 8' edge. A series of mirrors would be placed along the 2' edges of both ends of the surface. The mirrors would be fixed on adjustable mounts, enabling the beam to be aimed such that it will traverse the series of switchbacks, and finally hit a translucent screen at the end of the path. See the following image.



Note: The divergence of the laser beam is not represented.

When the device is standing on one end (such that the path of the beam is vertical), the beam will be travelling in-line with the flow, and won't experience any drift. When the device is reoriented to lie on its side, the beam will be travelling transverse to the flow and will drift downward causing the beam's position on the screen to move slightly. This movement might be all but impossible to observe with the naked eye, but by using a high resolution digital camera (with a resolution of 40 linear pixels per millimeter) to take photographs of the screen when the device is in varying positions, digital image processing software will clearly identify any movement.

By placing the opposing mirrors 2-1/3 (two and one-third) meters apart, only 11 mirrors (and adjustable mounts) are required in order to direct the beam along the 26.8125 meter path. Using a collimated 1 mm laser that has a divergence of 1 mrad, the mirror quantities and sizes required are: three 1", four 2" and four 3".

The experiment involves reorienting the test device though a series of 11 different positions, with digital images of the laser spot hitting the screen taken in each. After the experiment is completed, the 11 digital images will be published along with both the executable and source code of the image processing software for independent verification.

Experiment steps:

1) Image one will be taken with the device standing on one end (the foot). The amount of drift predicted in this orientation is zero. (See Fig. 1)

2) The device will then be leaned over toward its left side 22-1/2 degrees, where image two will be taken. The amount of drift predicted in this orientation is *sin*(22.5) x 40 = 15 pixels. (See Fig. 2)

3) The device will then be leaned over further to 45 degrees, where image three will be taken. The amount of drift predicted in this orientation is *sin*(45) x 40 = 28 pixels. (See Fig. 3)

4) The device will then be leaned over further to 67.5 degrees, where image four will be taken. The amount of drift predicted in this orientation is *sin*(67.5) x 40 = 37 pixels. (See Fig. 4)

5) The device will then be leaned over to lie flat on its left side (a total of reorientation of 90 degrees), where image five will be taken. Because the path of the laser beam is completely transverse to the direction of the flow, the amount of drift predicted in this orientation is 40 pixels. (See Fig. 5)

6) The device will then be leaned over toward its back side 45 degrees, where image six will be taken. Because the path of the laser beam is still completely transverse to the direction of the flow, the amount of drift predicted in this orientation also 40 pixels. (See Fig. 6)

7) The device will then be leaned over to lie flat on its back (a total of reorientation of 90 degrees), where image seven will be taken. Because the path of the laser beam is still completely transverse to the direction of the flow, the amount of drift predicted in this orientation is also 40 pixels. (See Fig. 7)

8) The bottom end (the foot) of the device will then be raised up to 22-1/2 degrees, where image eight will be taken. The amount of drift predicted in this orientation is *sin*(67.5) x 40 = 37 pixels. (See Fig. 8)

9) The bottom end (the foot) of the device will then be raised up to 45 degrees, where image nine will be taken. The amount of drift predicted in this orientation is *sin*(45) x 40 = 28 pixels. (See Fig. 9)

10) The bottom end (the foot) of the device will then be raised up to 67.5 degrees, where image 10 will be taken. The amount of drift predicted in this orientation is *sin*(22.5) x 40 = 15 pixels. (See Fig. 10)

11) The bottom end (the foot) of the device will then be raised up to 90 degrees, so that it will be standing on its head (opposite of the starting orientation of step 1) where image 11 will be taken. The amount of drift predicted in this orientation is zero pixels. (See Fig. 11)

Note that the degree and *sin* values shown in steps 8 through 10 do not contain typographic errors, as the sin of the angle applied to the drift is always measured from the vertical orientation.

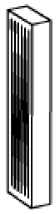


Figure 1

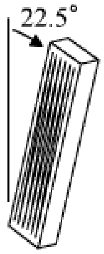


Figure 2

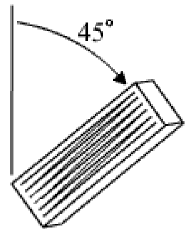


Figure 3

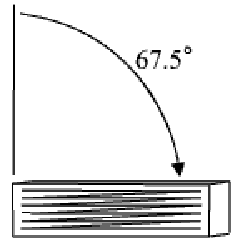


Figure 4

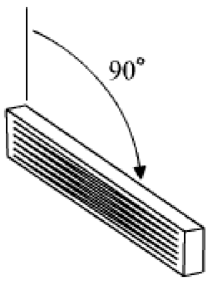


Figure 5

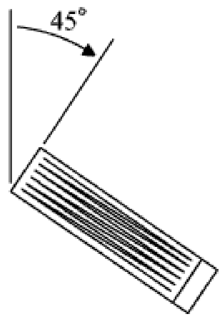


Figure 6

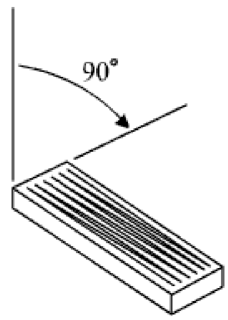


Figure 7

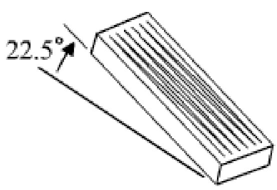


Figure 8

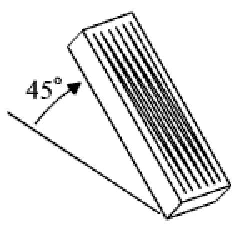


Figure 9

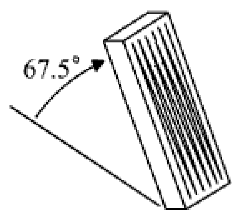


Figure 10

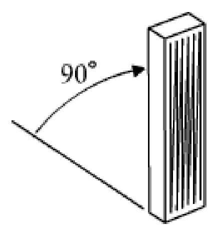
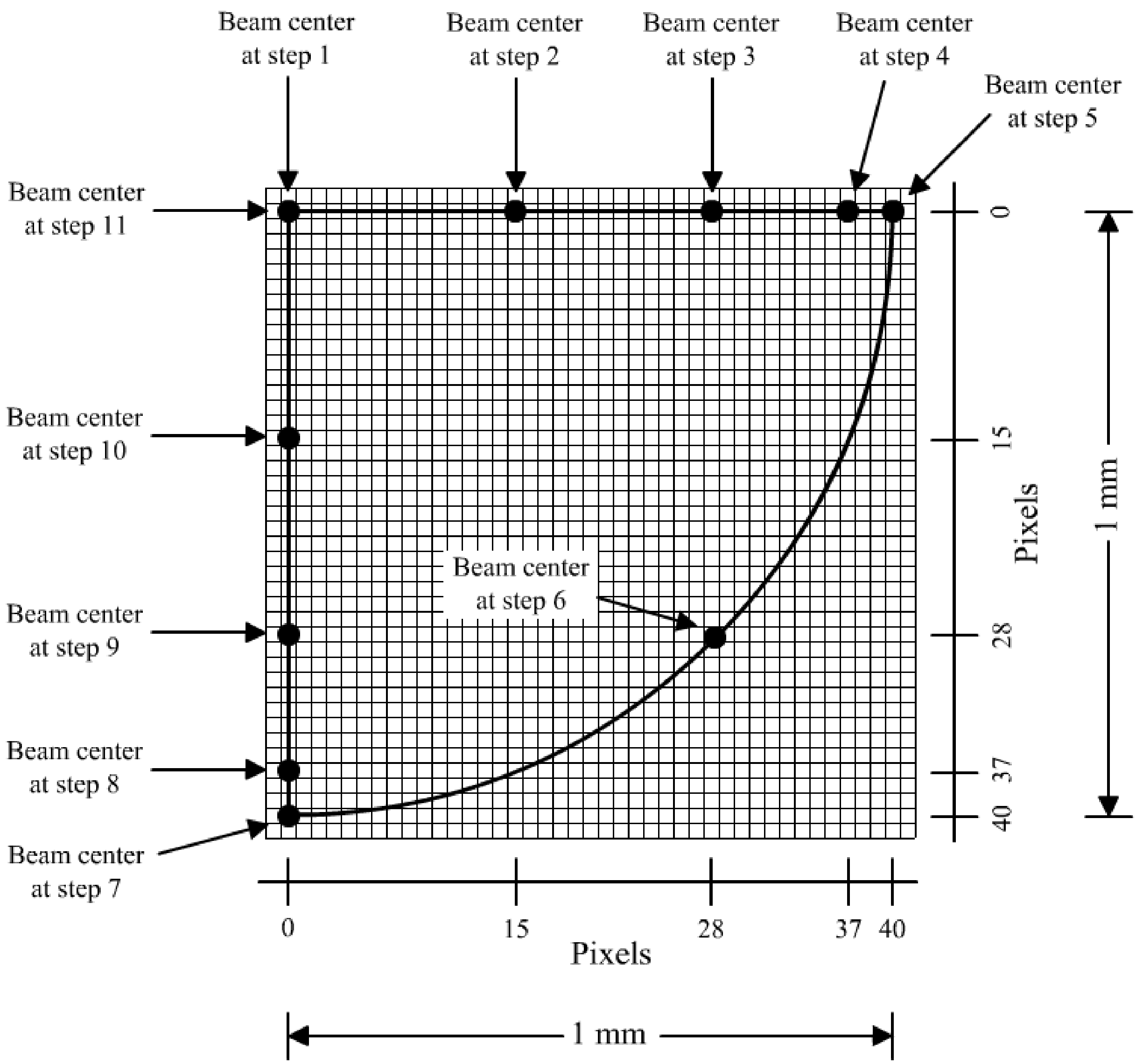


Figure 11

The following graph shows a progression of the centers of all 11 beam images (and the path followed by the beam center as the device is moved through all of the steps) if they (the beam images) were superimposed on each other.


Beam center at step 1
Beam center at step 2
Beam center at step 3
Beam center at step 4
Beam center at step 5
Beam center at step 6
Beam center at step 7
Beam center at step 8
Beam center at step 9
Beam center at step 10
Beam center at step 11
0
15
28
37
40
Pixels
1 mm
0
15
28
37
40
Pixels
1 mm