

# Re: The Twin Paradox explained from the moving twin ?

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- *From:* The Ghost In The Machine <[ewill@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:ewill@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Sun, 17 Sep 2006 18:00:09 GMT
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In sci.physics.relativity, G. L. Bradford

<[glbrad01@xxxxxxxxxxxx](mailto:glbrad01@xxxxxxxxxxxx)>

wrote

on Sun, 17 Sep 2006 08:05:06 -0400

<[HM-dndgFQdDTp5DYnZ2dnUVZ\\_u2dnZ2d@xxxxxxxxxxxx](mailto:HM-dndgFQdDTp5DYnZ2dnUVZ_u2dnZ2d@xxxxxxxxxxxx)>:

(Sigh)

A traveler is traveling between two stars measured at each end to be ten light years apart. Any observer on an Earth type planet at star A will observe star B to be zero minus ten years relative to his own atomic clock time, thus ten light years distant from him. Any observer on an Earth type planet at star B will observe star A to be zero minus ten years relative to his own atomic clock time, thus ten light years distant from him.

The traveler stands beside the observer on the planet at star A and observes with him star B. They both observe star B to be ten light years away or zero minus ten years in time relative to star A. The traveler boards his space supership and takes off for star B.

It takes the traveler two years to get one light year from star A. Star A,

[snip rest of very long-winded diatribe for brevity]

I'm assuming this means  $v = 0.5 c$ ; this gives a transit time of about 40 years objective but only 34.64 subjective, plus any time needed to accelerate to  $0.5 c$  on both ends of the journey. Since humans find  $9.805 \text{ N/kg}$  ( $= 9.805 \text{ m/s/s}$ ) comfortable and  $100 \text{ N/kg}$  barely tolerable, one might have to add as much as  $1 \frac{1}{2}$  to 2 years on each end for purposes of getting up to speed. The rest of the time is spent in free flight, although one could spin part of the ship to generate centripetal force.

The best I can do is a hydrogen-boron drive, which in theory should give  $v = 0.05 c$  with a big enough fuel tank. This gives a trip 400 years subjective,  $399 \frac{1}{2}$  objective — and that's assuming refueling at planet B is possible.

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#191, ewill3@xxxxxxxxxxxxxx

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