Re: How to really terraform (part 1)

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From: James Nicoll (*jdnicoll_at_panix.com*)
Date: 06/17/04

Date: 17 Jun 2004 09:59:30 −0400

In article <1087465212.256455@haldjas.folklore.ee>,
Sander Vesik <sander@haldjas.folklore.ee> wrote:
>Christopher James Huff <cjameshuff@earthlink.net> wrote:
>> In article <1087344582.784451@haldjas.folklore.ee>,
>> Sander Vesik <sander@haldjas.folklore.ee> wrote:
>>
>> > Thats not a problem − they don't have to pay in advance, money transfer
>> > orders move more or less as fast in space as they do back here on earth −
>> > at lightspeed (minus delays in communication medium and equipment).
>>
>> Assuming the government and companies survive. The only way this could
>
>The acceleration and power−feed phase would not last longer than exit
>from Solar system. in fact, it make sense for it not to.

I'm not sure 60−100 AU is enough distance for a massive object like a generation ship to get to 0.02 C.

Hmmm.

S = 1/2 at^2
V = at or t = V/a
so
S = 1/2 a [V^2/a^2] or 1/2 V^2/a
a = 1/2 V^2/S

If S = 1.5^13 m and V = 6x10^6 m/s
a = 1.2 m/s/s

That's a hell of an acceleration for a big ship.

Call it 100,000 tonnes dry, and 400,000 tonnes fueled and if Vexhaust ~ delta vee, we're talking something like 1.5x10^15 watts.

Of course by its nature, interstellar flight involves huge amounts of power.

>> work is with an extremely cheap and low−maintenance solar power
>> satellite, and then you have problems like pseudo−eco−terrorists who
>> think humanity shouldn't spread destroying your power station. The risks
>> of your power source being turned off before you reach your destination
>> just seem far too great. I don't think such a mission should rely on
>> beamed power for more than a couple decades.
>
>INtrestellar power beaming doesn't work well anyways.
>

No?

People who are into beaming power using microwaves are willing to assume we can make arrays many km across. If we can use much shorter wavelengths, an array of the same size has a much longer reach. Blue light gives you D1D2 of about 1.6x10^10 m^2 over 4.3 ly. Those are big (two arrays 130 km in diameter, say, or one 1000 km in diameter and one 16 km in diameter or some other useful combination) but not entirely unthinkable, given the technological context.

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"The keywords for tonight are Caution and Flammability."
JFK, _Bubba Ho Tep_