Re: Heavy Lift Design for Mining/Cargo Propulsion

Source: http://sci.tech−archive.net/Archive/sci.space.policy/2008−04/msg00588.html

- *From*: American <samuelransom@xxxxxxxxxxx>

- *Date*: Sun, 20 Apr 2008 18:52:14 −0700 (PDT)

On Apr 20, 7:49 pm, Willie.Moo...@xxxxxxxxx wrote:

> On Apr 20, 4:24 pm, American <samuelran...@xxxxxxxxxxx> wrote:
>
> > On Apr 19, 7:30 pm, Willie.Moo...@xxxxxxxxx wrote:
>
> > Yes, I can see the complexity there, which is why I'm not us−
> > ing "turbopumps" in the design. There's no "jet" being produced
> > for "thrust" here − just a magnetohydrodynamic injector for each
> > pellet blasted into the thrust dome.
>
> [snip]
>
> You are truly clueless. The magnetohydrodynamic injector is a pump
> that injects the propellant, in this case the pellet you describe, and
> the thrust dome as you call it is indeed the jet. If the jet is well
> collimated your rocket is fairly efficient, if the jet is not well
> collimated, it is less efficient.

It's useless to argue semantics. Is there a magnetohydrodynamic injector that is patented as a pump? (Probably not, because I've already "invented" one!) The "jet" is more like controlled "blast", but sure, it's collimated: as the density radius product of the imploded pellet is raised beyond a few hundred, with a pellet density greater than 100,000 times the liquid density. X−rays are trapped with laser energy outputs of 10^4 joules, at 50% efficiency.

As the pellet becomes imploded tenfold in radius (1,000 times in volume), the confinement time is also reduced tenfold, and the burn time is reduced by a factor of 1,000. The burn efficiency is therefore increased by a factor of 100 to 10%, yielding 30 times the laser input energy.

American
.