

## Re: NASA gets SGI 2048-core Itanium 2 supercomputer

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*Source:* <http://unix.derkeiler.com/Newsgroups/comp.os.vms/2007-12/msg00119.html>

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  - *Date:* Mon, 03 Dec 2007 17:27:05 -0500
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david20@xxxxxxxxxxxxxx wrote:

Given the low gravity and hence low escape velocity of the moon this oxygen could form a valuable resource to enable spacecraft refueling in cis-lunar orbit cutting down on launch weight from Earth.

In order to reach the moon from the earth, you need to achieve escape velocity (or nearly achieve it) which represents the vast majority of the fuel you need to get to mars anyways.

So your mars ship will spend tons of fuel to get to moon, then spend fuel to slow down insert into lunar orbit, wait to be refueled so it can again accelerate out of the moon's orbit to get to mars,

Now, if you could manufacture the ship on the moon and launch the parts into lunar orbit for assembly, then you would have huge fuel savings because the only cargo from earth to moon would be the crews.

One needs to do the math on whether using the moon as a gas station on the way to mars makes sense or not. If you need to have fuel for both outbound and return trips, it may make sense to detour via the moon where you would load the fuel for the return trip and then top off the outbound fuel to compensate for the waste of detouring to the moon. But whether building all the facilities on the moon to do that makes sense compared to just launching more fuel from earth with existing cargo launchers is something accountants have to look into.

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