

Re: We can meet all our needs through space development

# Re: We can meet all our needs through space development

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*Source:* <http://sci.tech-archive.net/Archive/sci.space.policy/2008-01/msg01072.html>

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- *From:* [Willie.Mookie@xxxxxxxx](mailto:Willie.Mookie@xxxxxxxx)
  - *Date:* Thu, 31 Jan 2008 13:46:04 -0800 (PST)
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On Jan 31, 12:55 pm, BradGuth <bradg...@xxxxxxxx> wrote:

The laws of physics are the same, and for the most part the best available science hasn't changed all that much over the past decade, and yet there's still no Mook H2 as green hydrogen flowing anywhere in sight. What gives?

There's no question that humanity is quickly outgrowing the limited resources of this badly pillaged, raped and polluted planet, although going off-world has loads of spendy and energy consuming problems that have not been resolved, especially on behalf of accommodating our extremely frail DNA that's not exactly gamma and X-ray proof.

Without an affordable and technically doable surplus of Willie PV energy, along with a healthy cache of all that green and relatively cheap H2 gas that'll yield those \$8/barrel of synfuel from coal, we're screwed unless we go all out nuclear and having to continually prepare for surviving WWII.

. – Brad Guth

On Jan 31, 9:11 am, Willie.Moo...@xxxxxxxx wrote:

On Jan 30, 9:25 pm, Einar <eina...@xxxxxxxx> wrote:

On Jan 30, 3:08 pm, Willie.Moo...@xxxxxxxx wrote:

On Jan 30, 9:44 am, Ian Parker  
<ianpark...@xxxxxxxx> wrote:

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On 30 Jan, 12:18, Einar  
<eina...@xxxxxxxx>  
wrote:

On Jan 29,  
2:13 pm,  
"Mike  
Combs"

<mikeco...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>  
wrote:

"Einar"  
<eina...@xxxxxxxx>  
wrote  
in  
message

[news:b8db2464-6d7e-47c1-b641-870a89468e4e@xxxxxxxx](mailto:news:b8db2464-6d7e-47c1-b641-870a89468e4e@xxxxxxxx)

This  
sounds  
more  
like  
one  
would  
hope  
that  
the  
world  
at  
2099  
might  
be  
like.

Write  
a  
schy  
fy  
book

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on  
this,  
a  
suggestion.

It  
will  
most  
certainly  
remain  
a  
very-distant  
science-fiction-y  
concept  
for  
as  
long  
as  
we  
choose  
to  
view  
it  
as  
such.

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Regards,  
Mike  
Combs

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By  
all  
that  
you  
hold  
dear  
on  
this  
good  
Earth  
I  
bid  
you

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stand,  
Men  
of  
the  
West!

Aragorn

Now,  
SpaceX is  
still  
struggling  
with their  
rocket, Ares  
is in  
development  
problems...and  
yet those  
are a lot less  
ambitious  
than  
what is  
suggested  
here

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something  
with 500  
ton LEO  
capability.

It's plans  
like these  
with  
everything  
assumed to  
go right that  
aren't  
believable.

I don't understand Ares.  
How is it that almost 40  
years ago Armstrong  
and Aldrin went to the  
Moon on top of a Saturn 5?  
In what respects is  
Ares "better" than Saturn?  
Certainly not in \$/Kg.

– Ian Parker– Hide quoted  
text –

– Show quoted text –

Its a function of the amount of money spent  
and how wisely it is  
spent.

I have given you my ideas here. Einar says  
they're not believable and  
compares what I have proposed with  
something on a whole different  
order – apples and oranges.

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Saturn V cost \$9 billion and 6 years to develop – using results of DOD programs on the E1/F1 and J2 engines with 13 vehicles built and flown..

I propose taking an ET sized airframe propelled by an annular aerospike engine, with an RS-68 pumpset (3) in each engine – to produce a ET sized booster– stretched 40% – massing 1,000 tons at lift off, creating 1,400 tons thrust at lift off – operating 7 at a time to create a three stage operation to loft 500 tons to LEO. They will have an advanced thermal protection system and be fully recoverable with downrange tow planes picking up the pieces.

I estimate that this program will cost \$6 billion to complete in 4 years and result in 4 vehicles that put 500 metric tons into orbit each launch at a cost of \$70 million (\$10 million per element per flight)

Why does this seem infeasible? What specifically is infeasible about it?

Mind you, you are suggesting a difficult and expensive development program.

No I am proposing a large number of interrelated programs with a common vision. The development of our interplanetary frontier.

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You are actually suggesting a good number of expensive and difficult development programs.

Yes, with each opportunity structured as a separate finance company using a project financing model.

You may have some money, but you are not a trillionaire.

There are 9.5 million millionaires in the world. Collectively they control \$40 trillion. This is largely liquid. They are continually looking for good returns on this money. Of this approximately 20% is earmarked for credible high risk investments.

My success with the eight projects I am currently sponsoring, will allow me to sponsor other more risky projects going forward. I will also maintain ownership by putting in the early stage capital, which is always good news to a prospective investor.

I mentioned the other programs to demonstrate that much less ambitious projects have run into development difficulties, meaning...ought to have been blatantly obvious...

Projects fail when you run out of money before you run out of problems. Oftimes programs are underfunded and get an undeserved bad reputation. That is what I find maddening about your responses. You say X did thus and so, without any analysis or understanding. X may very well be done thus and so – but unless you know how X works and the detailed history of X – you can't really conclude anything about it.

Projects succeed when you run out of problems before you run out of money. Someone may say, Conestoga lost its shirt. Yet the Saturn program in less time produced a rocket that sent men to the moon. Of course Conestoga was limited by the capital a group of angel investors could throw at it. Saturn spent \$9 billion and in six years did amazing things.

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Financial genius is as important as technical genius in getting things done here. Humanity has enough money. I even have the phone numbers of all the people who have most of it. I now have a business model that lets them risk a portion of it on new technologies.

that you program is likely to encounter  
development difficulties scales large as well.

People are willing to take risks. The larger set of interconnecting programs is broken down into a series of projects. Buying a basket of project positions limits risk and guarantees a low level of return.

Think of an oil company. Oil companies routinely sell positions in a wide range of projects in response to their exploration and discovery operations. They have an over-riding vision of how they will operate. The opportunities presented by their exploration and discovery activity are organized and financed one at a time. So, you don't buy BP – you buy BP Alaska pipeline company, or BP Shenzhen province company and so forth.

Same here.

There is an over-riding vision of developing off-world resources. I have an R&D department, and an opportunity development department, and we crank out projects that on balance make money. We then tap into the 9.5 million SEC qualified people on the planet, and ask them for up to \$4 trillion in risk capital.

Maybe you can find trillions to spend when all of what you  
are  
proposing is added together.

Well, there is an order of battle as they say.

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Clearly, the mere development of that craft will take a while.

The heavy lift launcher, with its launch facility in New Mexico, will take 4 years and cost \$6 billion. This will build a fleet of 4 of the largest launch vehicles, – built around 28 launch elements.

There will have to be experiments,

YES. Stennis is available for static tests. Dryden and White Sands are available for suborbital tests.

i.e. the aerospike engine is yet to actually fly.

That is true, but the folks at P&W say that nozzles are not a problem. They have worked with innovative nozzle designs and new airframes (the DCX used a deeply throttled RL10 made specifically for the program at very low cost) – so, this is more than just hand-waving sir. I have qualified vendors who have given me budgets time frames and all the rest..

Now, you might pay for this if you would first use the thing in a singular to launch satellites for some time, till the bugs have been worked out.

The bugs as you call them will be worked out in numerical simulations first, then in ground tests, then in suborbital flight tests.

the nice thing about a reusable vehicle, is you can build test articles and shepherd them all the way through to production. You can also build subscale test articles. Another reason I like P&W – they have the RL10 – Reduce the 1,400 metric tons of thrust on each of the boosters of the full scale launcher to a 45,000 pounds of thrust on a subscale model – and you get a dandy little 7.8 metric ton

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launcher as part of the deal. In the various configurations you can do 2 ton 4 ton and 8 ton to LEO.

At current costs per kg – these will start earning their keep well before the larger program is done.

Then the development curve could be something similar to what say Kistler is trying to achieve,

Kistler doesn't have the right financial structure to raise the funds needed on the scale needed.

first trying to establish a reusable launch vehicle and later they intend to expand on it.

This is a recipe for death – since any failure turns off the money supply. It would be like an oil company leasing land and raising money one exploration well at a time. No, failure on one well would kill the program. You raise ALL the money you are likely to need to achieve your longer range goal. It doesn't matter how much that is – failure to achieve this first step – means the program is very likely to fail. Those who cannot

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read more »– Hide quoted text –

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I have sponsored eight projects that when completed collectively produce over 1,000 metric tons of hydrogen per hour from 257 GW of solar panels covering a total area of 1430 sq km. This as far as I know is the largest use of solar energy and the largest use of hydrogen on the planet.

When completed in 2011 these projects net me over \$40 billion in equity.

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I will then use that equity to develop 45,000 sq km of solar panels on land that I already have optioned, and to increase the number of solar panel plants to at least 14. I will also acquire oil re-marketers in the USA as well as coal reserves in the USA – and merge them to create over \$350 billion in value and fully populate the land I presently have options on with solar panels.

When completed in 2020 this will provide 1,000,000 metric tons of hydrogen per day and, eliminate 2/3 of America's carbon emissions, and turn the USA from an oil importer to an oil exporter and reverse our balance of trade, and increase our credit standing in the world and the strength of our currency – which means lower interest rates and easier credit for businesses and homes.

By 2020 I hope to be in a position to augment the existing terrestrial receivers with laser energy from space rather than expand mindlessly the size of the terrestrial systems. This will allow an expansion of 20x in power output from the then existing 45,000 sq km – and allow the USA to provide ALL the world's energy needs in the form of hydrogen gas. The world average income will grow to current USA per capita rates by 2033 – and the world will grow to 20x current per capita income for the USA by 2080.

Increased energy use translates to increased material uses. This means higher prices for products in short supply. Under these conditions it makes sense to increase capacity where possible. In instances where reserves are limited, it makes sense to develop reserves in non-traditional areas. Success with my energy program, leads naturally therefore to an early strategic decision to develop key technologies to access those non-traditional sources – which I have described here.

In light of these facts your commentary makes no sense.

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