Sent: Monday, July 23, 2012 11:04 AM
Subject: SEEING the arrival of private human space access

1. As we enter the second half of 2012, the imminence of commercial human space access is looming larger. Here's a survey article I wrote for an engineering magazine in January:
http://www.jamesoberg.com/image/les_valentine_xcor_lynx_pm.jpg

2. The special pre-flight orientation and training needed to allow a brief space traveler to really 'see' what their eyes are being overwhelmed with was discussed in my article here http://www.txchnologist.com/2012/space-sight-how-can-you-prepare-to-see-earth-from-space
with an excellent reader's comment link to another [purchase required] article here: http://www.aperture.org/exposures/?p=10220

3. SEEING from space is so visually striking that it cries out for more advance attention from a visual medium such as ours. It's beyond just crying out, "What a Beautiful View" -- it's being astonished anew:
http://seedmagazine.com/content/article/downtime_on_the_high_frontier/

4. To SEE for myself, I recently went walkabout at the Mojave, California, airport flight line to see the row of 'new space' companies preparing for private human access to sub-orbital space, and other destinations.
http://www.jamesoberg.com/image/gateway_to_space.jpg

5. The 'star tenant' there is 'Scaled Composites', which under Burt Rutan [now retired] built SpaceShipOne to win the Ansari X-Prize. I was able to get a one-on-one off-the-record interview with Doug Shane, Rutan's successor
http://www.jamesoberg.com/image/scaled_composites_director.jpg
and he discussed their plans for a flying launch pad to deploy an upper stage to take medium-sized payloads [including manned spacecraft] into orbit in five years.

6. I was given a background-only tour of their carbon fiber fabrication facility by John Turnipseed, a new buddy of mine retired from NASA Dryden and now director of flight safety for Virgin Galactic. The craft and artistry of the operation, its clever vacuum suckers and 'moving kilns' for packing and baking the layers of carbon fiber, and the ongoing design work for the crew cabin for SpaceShipTwo, were fascinating.
http://www.jamesoberg.com/image/inspecting_carbon_composite.jpg

7. 'Scaled composites' has already farmed out serial production of the WhiteKnightTwo and SpaceShipTwo vehicles for commercial customers around the world. A new company, "The Spaceship Company", has just completed the first [and largest ever] new hangar at Mojave in many years, the 'FAITH' -- Final Assembly, Integration, and Test Hangar.
http://www.jamesoberg.com/image/spaceshipfaithfacility.jpg

8. FAITH is an ultra-hi-security access-controlled facility, and I wasn't allowed to take photos inside. Their own photographer did so, and after review, some of them were sent to me -- here's one view:
http://www.jamesoberg.com/image/tsc_faith_complex.jpg

9. I also met with Lee Valentine, director of XCOR aerospace, in their "Dr. Zarkoff laboratory" hangar right next door to Scaled Composites.
http://www.jamesoberg.com/image/les_valentine_xcor_lynx_pm.jpg

10. There I got to sit in the cockpit of the Lynx mockup, the rocket plane designed to carry one pilot and one passenger to the edge of space -- in the near future. I suggested a sales promotion pitch to XCOR: "If you're not sitting up front next to the pilot, you're only a half astronaut."
http://www.jamesoberg.com/image/les_valentine_xcor_lynx_pm.jpg

11. As XCOR moves some operations to Texas, I'll also be staying in touch with them here.

12. One of the biggest surprises in the development of commercial human space access is that it won't be all rich tourists -- a large portion of the passengers may be scientists on research flights replacing sounding rockets. See this article of mine: http://spectrum.ieee.org/aerospace/space-flight/the-scientist-as-space-tourist In 2004, I had written about why NASA wasn't really interested [shocker] but how private researchers might really become interested -- as they now have, eight years later: http://www.jamesoberg.com/xprize_astronomy.pdf

13. Jay Barbree and I had a spirited debate over government versus private spaceflight here:
http://www.mnn.com/earth-matters/space/videos/nasa-working-on-space-taxi

14. I had been a fan of commercial space taxis early on [here on MSNBC, two years ago]:http://www.msnbc.msn.com/id/36678222/ns/technology_and_science-space/

15. Two separate proposals now exist for a commercial human lunar fly-by. The idea is only half as crazy as it looks, and it may lead to some kind of private mission beyond low earth orbit before any government takes thast step.

16. Private robotic access to the lunar surface -- the Google Lunar X-Prize -- is also now in advanced development. http://en.wikipedia.org/wiki/Google_Lunar_X_Prize. The initial ambitious closing date was December 31, 2012, but it was recently extended to 2015 -- and there are several serious competitors.

17. Other stories of mine on these themes are at
http://www.jamesoberg.com/spacetourism.html

18. I will monitor and advise as the topic becomes hotter, heavier, and more dangerous.