Sent: Wednesday, November 28, 2012 4:11 PM

1. Re -- Proposal to invite China on board the International Space Station

2. This idea comes up from time to time, and this version is probably the most reasonable presentation of it so far.

3. The story is here: http://www.msnbc.msn.com/id/49997774/

4. There are some attractive aspects of the idea and I commented on them, in the 'comments' section [attached below].. Direct link: <u>http://technology-science.newsvine.com/_news/2012/11/28/15517120-its-</u> <u>time-for-the-us-to-partner-with-china-in-space#comments</u>

5. When in Beijing as part of the NBC North Korean expedition last April I obtained some high-quality Chinese spacecraft models. Here is the 'Shenzhou', their human orbital vehicle: http://www.jamesoberg.com/image/shenzhou human spacecraft 2.jpg

6. The down side of China is that the ISS partnership did set some political standards for membership, which China's current regime might be dubious in meeting. And China's aggressive technology acquisition campaigns [in particular, ideas they copied from the Russian space program] are also genuinely worrisome.

7. Arguing that we partnered with Russia after decades of hostility is historically naive. We did a space docking with the Soviet Union in 1975, but did NOT partner more initimately until the Soviet Union collapsed in 1991 and consequently most human rights and espionage issues, as well as nuclear stand-off posture, eased enormously.

8. But the current limited proposal seems to avoid structural obstacles, and I'd love to see it procede toward serious consideration.

9. I've written extensively on China's space program and even testified before Congress about it. -- see <u>http://www.jamesoberg.com/china.html</u>

10. China is aiming towards its own multi-modular Mir-class space station by 2020, with its own international partners. Whether it wants to be seen as a junior johny-come-lately on the International Space Station, with all the negative prestige that implies, is a serious question. But having them in the generous 'space rescue' stand-by mode would probably be seen as honorable and positive.

Jim Oberg comment on Chinese ISS invitation proposal Wed Nov 28, 2012 2:51 PM CST

Having an alternative crew-retrieval capability for US personnel on the ISS, if Soyuz becomes unavailable, is a crew safety issue. As such, it could well be exempt from political barriers to technology transfer.

And as ASTP showed in the early 1970s, the US gained much more than Russia in having access to a hitherto closed area of their country, even though many Russian revelations NASA was exposed to were falsified. The same results could be expected here -- charades and misdirection to protect their real secrets.

Nevertheless I think it's worth examining and moving towards, if issues are satisfied.

Schedules might dilute most of the value, though. Probably the earliest that a Shenzhou could dock to ISS would be 2015 or so, providing little 'gapfiller' capability compared to Dragon. And Dragon will probably attain acceptable 'man-rating' for crew RETURN some years before it does the same for crew LAUNCH. So with NASA's recent acceptance of year-long missions in that same time period, any non-availability of Soyuz launch can be tolerated by simply leaving the 'stranded' crew on orbit for however long it takes to resume man-rated RETURN capability.

And by the way -- whenever you see somebody pushing international cooperation as a way to save money, you can tell right away they're blowing smoke -- or smoking something. That promise keeps being made, it keeps being betrayed, and yet short-sighted analysts keep pretending to forget bitter experience even in the recent past. In this case, however, with already-existing interfaces, one more visiting vehicle probably could be accommodated relatively easily.

If China really wants this option, it could well be politically or diplomatically beneficial to extract something from them, and keep the option open of shutting the door again for misbehavior. But privately, to save face all around.

Lastly, it remains unclear to me if China could even launch safely into the ISS orbit. They had originally planned to place their own flights at 51.6 but switched to a lower inclination [more easterly launch azimuth] to avoid booster ascent overflights over populated areas, including Taiwan. For occasional demonstration flights, they could probably swallow the higher risk, if Taiwan didn't make too big a stink or ask too big a price.