

September 19, 2015

Reno Nevada

By Dusty Camp

## **Von Delius' PHOENIX 4 two stage sweeps 96,000' feet**



Ryan Catanesi

**Curt von Delius' latest high altitude flight reached 29,244 meters with near perfect conditions in the Blackrock Desert Saturday. "We had an exceptionally straight boost and flight with amazing on board footage" von Delius said.**



Phoenix 4

**His state of the art project is based on the successful and enduring Black Brant 8 Sounding Rocket. This three year project has been extensively researched and combines the use of innovative modular components and ultra high strength materials to save weight and compartment space. Curt's unique interstage creates a very rigid stack while under boost with no friction or tip-off during drag separation. Also, ablatives are used on the sustainer to protect the airframe from extreme temperatures.**

Tower Cam



**At ignition, the PHOENIX 4 pulled 20 gees and hit 97 mph out of Curt's custom 20' tower on a Cesaroni M3400 booster, accelerating to Mach 1.31 After a beautiful drag separation and a six second coast, head end ignition lit the Cesaroni N1100 Moonburner for a 12.5 second burn. "This was really a flight to prove the design concepts with a relatively small booster, it's meant to fly much higher and faster" said Curt.**



Phoenix 4

**GPS telemetry and on the board HD video indicated a very straight flight and gentle apogee. Weather conditions and radiosonde data was not promising in the days leading up to the launch, but Saturday's ground conditions were calm with the Reno 12 zulu observation reporting the max wind of 55mph at 38,000' feet.**



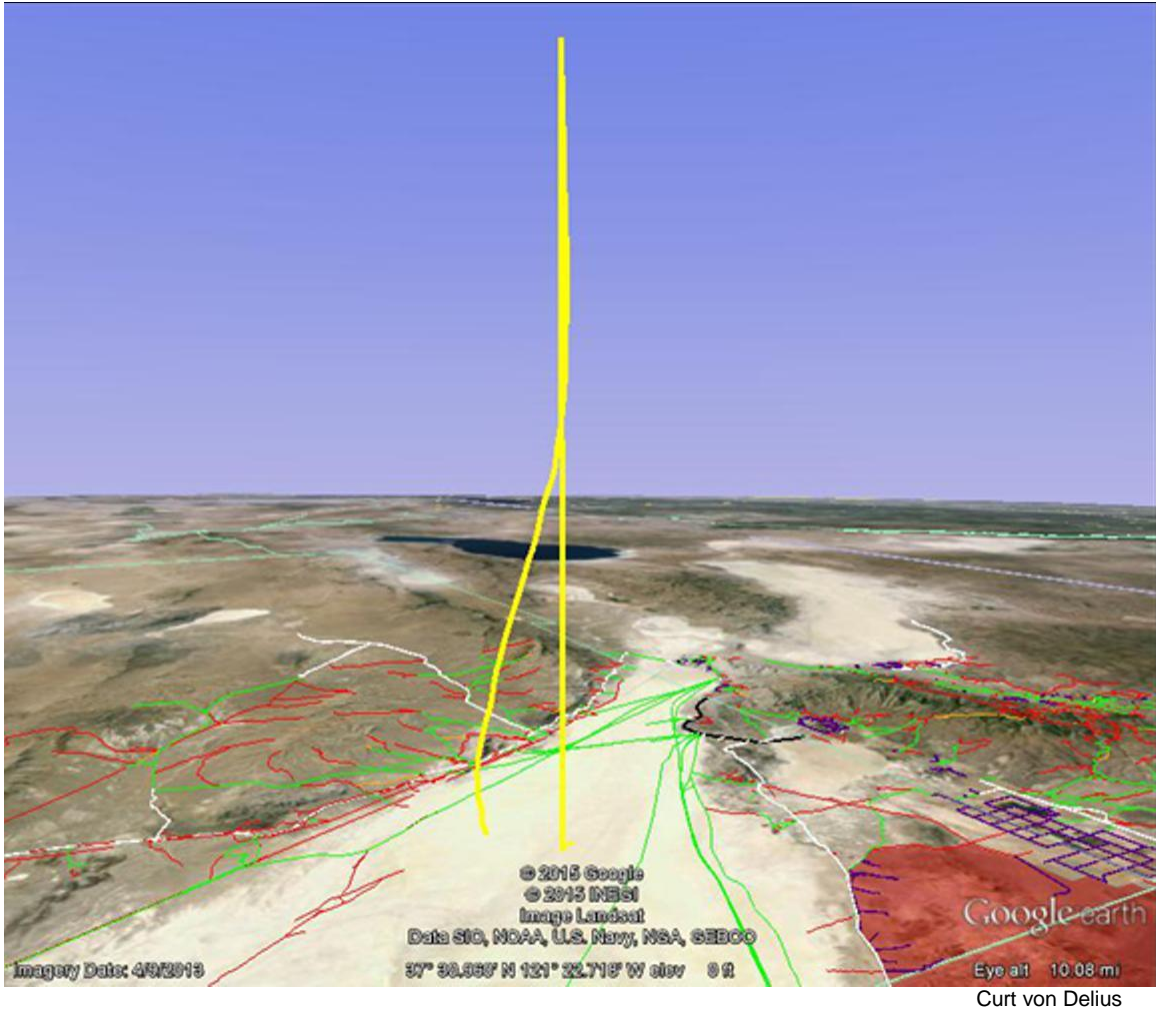
Phoenix 4

**The Sustainer and Nose Module touched down less than 2 miles out, each on their own recovery system. The systems utilize high porosity Disc Gap Band drogues for a rapid and stable descent from apogee. These are scaled after the 1.6 Viking DGB that were used on the Mars and Pathfinder Missions. A 66" Cross Form Main was deployed at 4000' for a soft touchdown. "We were within fifty yards and actually watched as it touched down." The Phoenix Booster had a recovery glitch but was recovered without damage.**



Phoenix 4

**Real time telemetry was provided by three 70cm 100mw Beeline GPS's on board the sustainer. The system includes two fixed base stations with dedicated long range antennas and two mobile stations for chase. Curt commented "Greg's new four layer boards lock quickly and worked flawlessly".**



**So what's next for the Phoenix 4 Project? Stay tuned.**