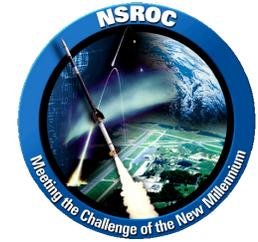




NSROC Technical Summary

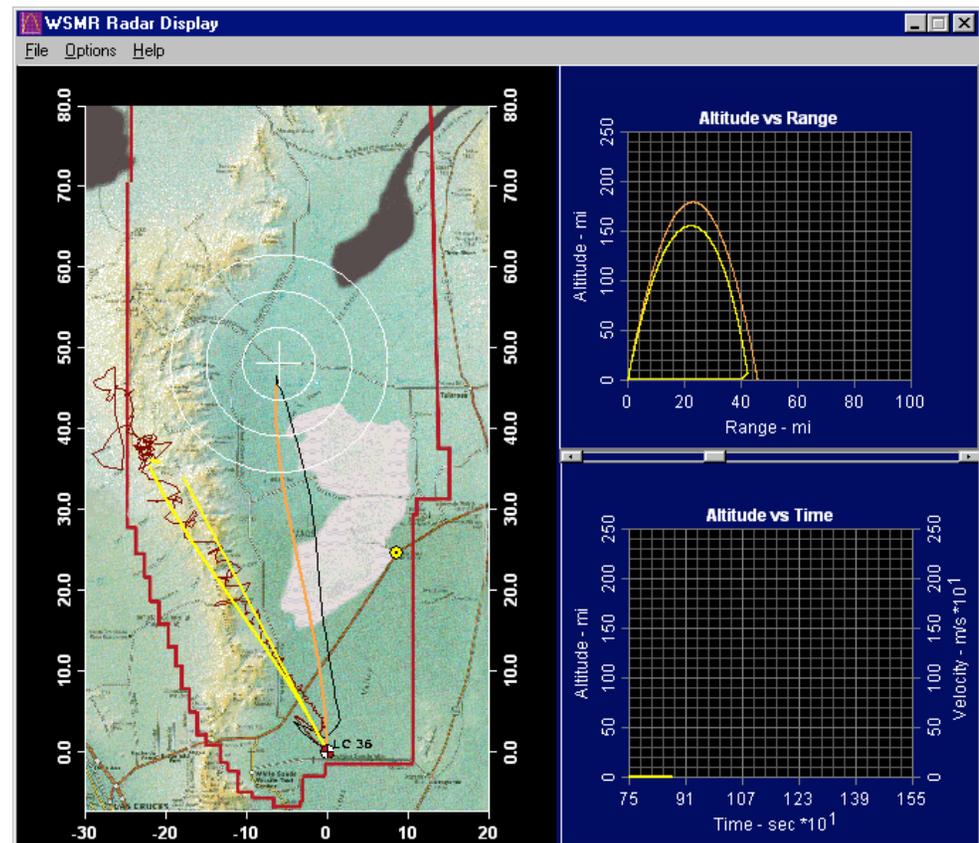
- Since February 1, 1999, NSROC has completed 26 sounding rocket missions. Our record is 24 -2.
- Currently we are actively supporting 58 additional missions on the books. Of these, 11 are of the Viper Dart class.
- The program suffered 2 consecutive failures at White Sands Missile Range. Each mission failure is unrelated. More info will follow.
 - Cruddace/36.162
 - Wilkinson/36.183

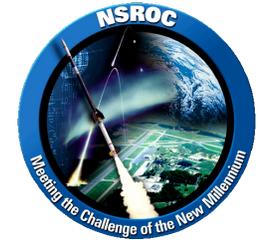
Cruddace/36.162 Mission Failure



Failure Cause:

- The launcher settings were based on a wind profile that was over 65 minutes latent on a dynamic night. The jet stream shifted at $\approx t - 20$ minutes, from directly above the launcher towards the range center, resulting in an $\approx 25\%$ drop in the overall wind profile. The composite wind profile was the highest noted for a sounding rocket mission at WSMR (~ 30 knots from surface to 40kft.)
- The NSROC prelaunch process did not fully analyze the wind data as accomplished pre-1997.





Cruddace/36.162 DG Mission Failure

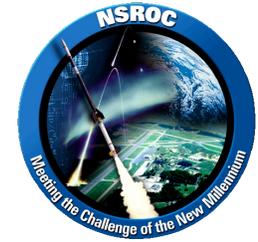
AIB Process -

- Cruddace/36.162 Launch occurred on 2/25/00
- AIB established on 2/26/00
- AIB Preliminary Assessment released on 3/13/00
- AIB Actions and Recommendations released on 4/3/00
- NSROC team established to implement the AIB A&Rs
- The AIB Final Report was released on May 30, 2000.

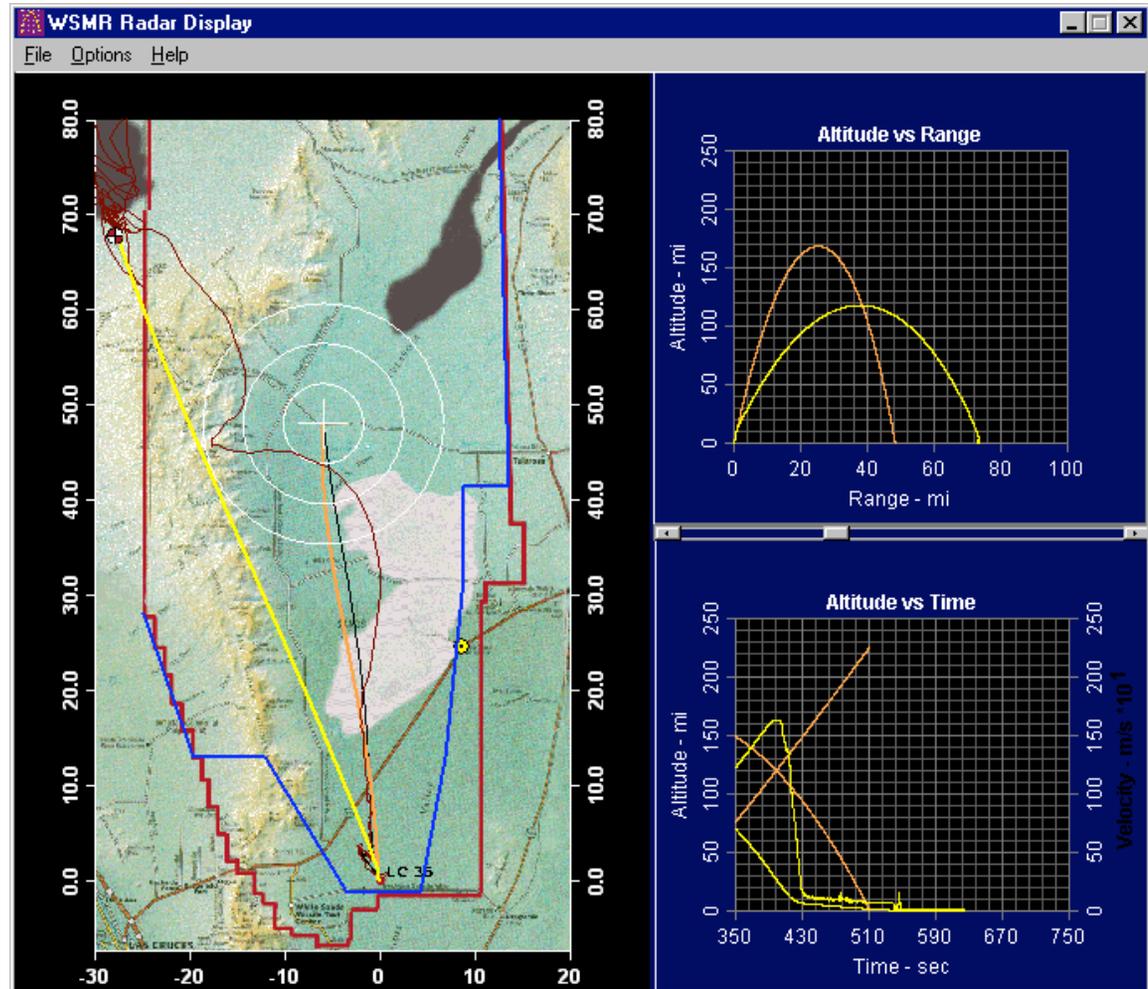
AIB Action Item Implementation

- Following the release of the AIB's Actions and Recommendations, NSROC established an internal team to implement the AIB's A&Rs.
- All A&Rs have been implemented into the NASA/NSROC program.
- Two separate briefs to NASA SRPO regarding progress and concurrence.
 - 4/11/00
 - 4/24/00

Wilkinson/36.183 Mission Failure



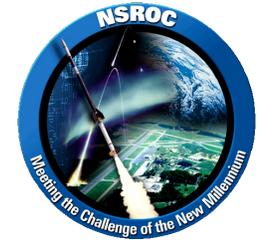
- On Friday evening, May 5, 2000 at 2330 local (WSMR), the Wilkinson/36.183 vehicle was launched.
- At $t + 28.79$ seconds, the vehicle deviated from the predicted flight path.
- At $t + 39.9$ seconds, WSMR Flight Safety implemented the Thrust Termination event.
- An AIB was established on May 6, 2000 in the wake of the mission failure.



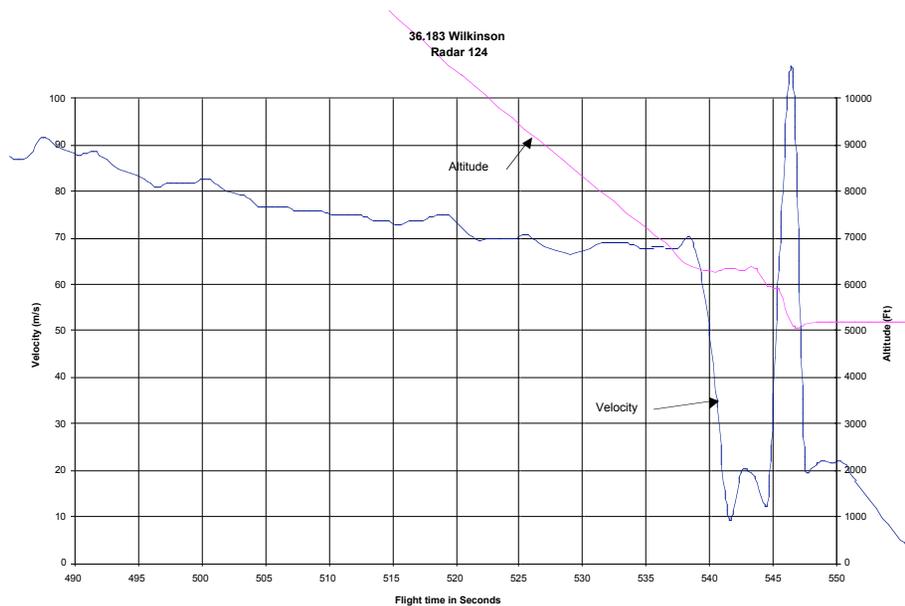
Current AIB Status - Wilkinson/36.183 Mission Failure



- Two significant anomalies were noted:
 - DS-19 Boost Guidance System (BGS)
 - Known is the DS-19 calculated IIP deviated from the nominal flight path, based upon DMARS sensor anomalous input at 27.89 seconds.
 - Indications now relate to solder drop on the yaw gyro calibration lead. The cal input shorted during the sustainer burn and the yaw gyro IIP output deviated by 15 deg.
 - Recovery System
 - The recovery system failed and the payload was recovered with extensive damage.
 - Failure identified to the parachute package. AIB still investigating the specific cause.
- The Failure Investigation is open and ongoing.



Wilkinson/36.183 Recovery System



Wilkinson Payload following impact.
Payload impacted the ground, bounced and came to rest ~5 feet from initial impact point.

Wilkinson Recovery Details:

- Radar Plot Notes the Deceleration of Payload three seconds prior to impact.
- Heat Shield pyros did fire as planned, at 16,100 ft altitude.
- Continuity loop severed (heat shield) did break as pyros fired.
- Rags did not deploy and decelerate the payload as designed.
- 17th flight of a packed chute system from the lot of 20 obtained in 1997.





Sounding Rocket Working Group - Technical Discussions

What is NSROC doing and thinking regarding the implementation of program enhancements, process growth and an increased need to 'get better and smarter'?

Technical Discussion Agenda

- | | |
|----------------------|------------------|
| - ACS Transition | Robert Shendock |
| - Motor Buy Status | Robert Maddox |
| - EE: | Charles Lankford |
| Program Enhancements | |
| PTP Status | |
| PCM Test Unit | |