

## 12 Sept 2010 Global Hawk Platform Scientist Report (AL92/PGI-44) - Rich Blakeslee

Submitted by [rblakeslee](#) on Tue, 09/14/2010 - 14:12

- [GH](#)
- [PGI44L \(pre-Karl\)](#)

Flight Date:  
Sun, 09/12/2010

**Mission:** Global Hawk Flight to AL92 / PGI 44 on Sept 12, 2010

**Platform Scientists:** Bjorn Lambrigtsen, Richard Blakeslee

**Discussion:** Global Hawk (GH) took off on schedule just after 11:30 UTC for a flight to PGI-44/AL92. All payloads (except dropsonde system) were green (note: dropsonde system not yet certified for operation). Early in the flight the Ku band satellite communications failed, was briefly restored, then permanently failed due to the hardware failure of the ground station down-converter unit. The loss of Ku link prevented reception of real time video, HAMSR imagery, and GHIS data. More seriously scientifically, it was initially uncertain that it would be possible to place HIWRAP into its data acquisition mode. However during the transit, an Iridium telnet network connection to HIWRAP was established, enabling Matt McLinden (HIWRAP) and Carl Sorensen (GH IT support) to successfully place HIWRAP in its data acquisition mode, highlighting again the value of having redundant payload satellite communications. The quality of the HIWRAP data will have to be evaluated after flight as it was not possible to use the low band Iridium link during flight to evaluate HIWRAP settings and operation. Once on-station at AL92, GH flew coordinated butterfly patterns with the DC8 twice and then flew a coordinated flight pattern with the NOAA P3 (N43), after which the Global Hawk returned to base. The total mission flight duration was 24 hours 20 minutes.

**Acknowledgements:** Thanks to all on the ground and in the air that made this coordination possible. Following the storm the GH transited back to DFRC. Thanks also to the forecast team members at FLL (Dave Zelinsky, Dan Harnos) and DFRC (Amber Reynolds) that kept a watchful eye out for convection during the GH enroute and return transits.

**Lessons learned:** 1) Communications will be improved by having all science requested flight changes be conveyed to the GH pilot only through the platform scientist. The platform scientist will pass request from the mission scientist to the GH pilot through the GH payload manager. This approach was adopted part way through this flight to reduce some communications confusion that led to one instance of mis-communications on flight direction. This approach, once adopted, this worked very well. 2) GH pilots interested in knowing cloud top heights. A request to generate a table of cloud top

heights versus cloud top temperatures has been requested for next flight. This may be less of an issue when Ku communications is up and the pilots have video imagery.