

LIDAR experiments at SGF

Herstmonceux, UK

Graham Appleby, Rod Jones¹, Christopher Potter and Philip Gibbs

¹ Department of Chemistry, University of Cambridge, UK





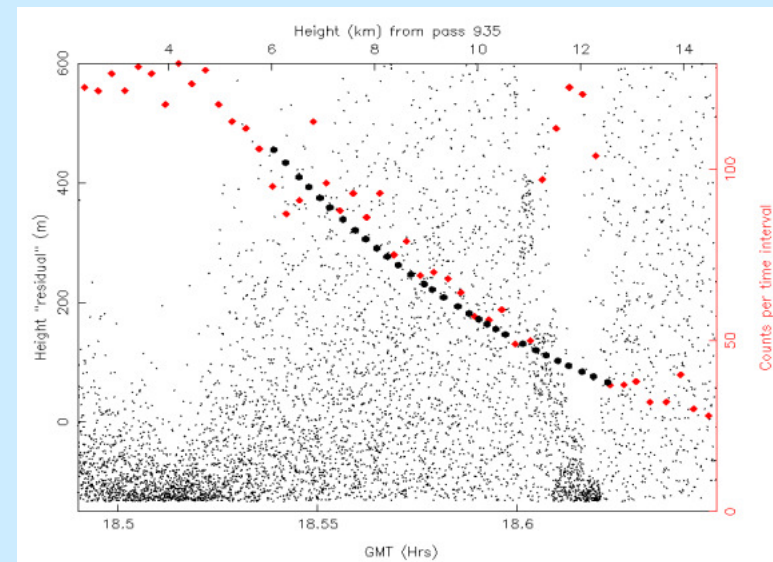
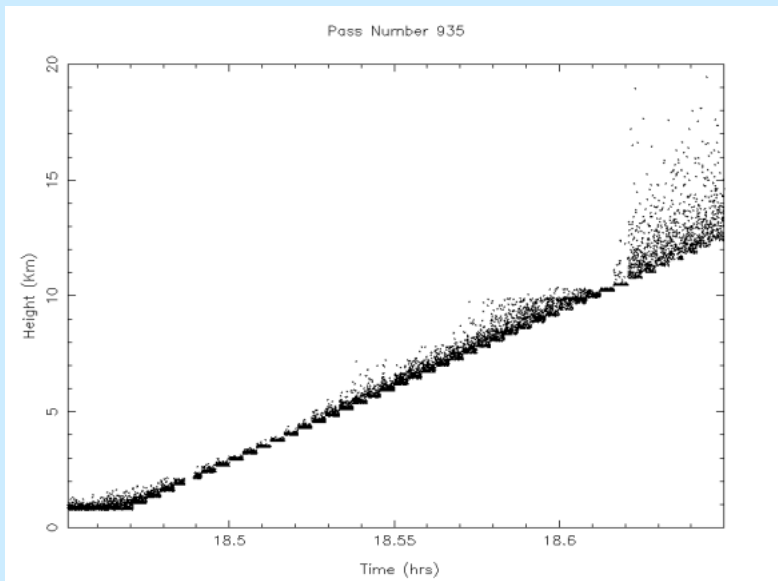
Motivation



- A lot of information on atmospheric haze, pollution, inversion layers, cirrus, contrails, etc. is evident in backscatter from first ~12km during ranging:
- Get some extra science ‘for free’
- Aid to ranging link budget calculations – e.g. why so variable return success?

methods

- Gating C-SPAD in steps from zero to ~12km up through atmosphere
- Time backscatter events, ‘seeing’ through light haze, cloud;
- Measure boundary heights, scale height, etc:



Methods (2)

- Comparison of expected satellite ranging link budget with observed return stats;
- Use computed and actual ND filter values required for single photon returns;
- Measure optical densities e.g. of contrails:

