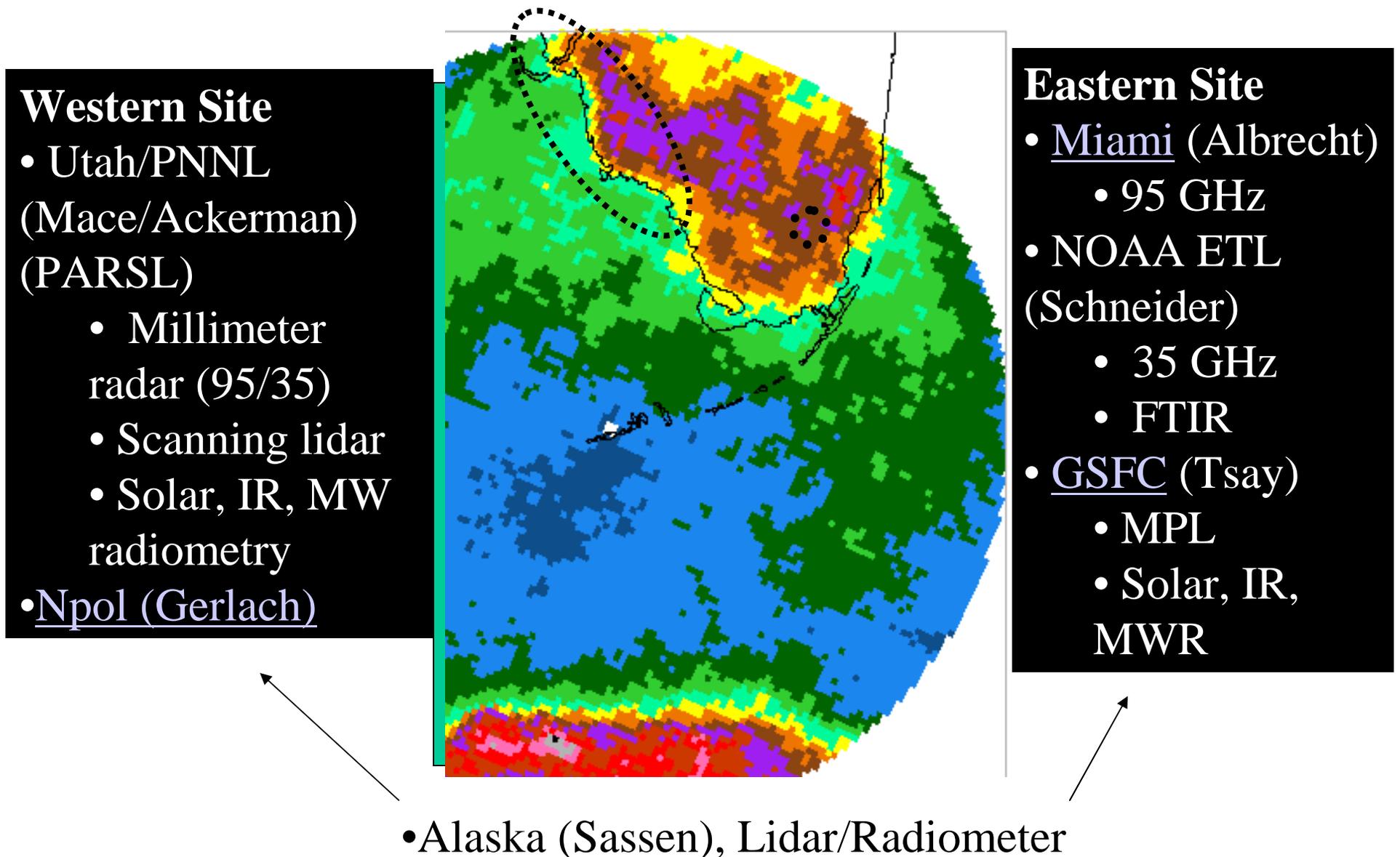


Ground Site Science During Crystal FACE



Ground Site Science During Crystal FACE

Broad Science Objectives:

Background: Algorithms applied to remote sensing data (grnd-based or satellite) rely on *empirical relationships (assumptions)* :

Particle Spectrum function, Mass-D, Area-D, Fallspeed, bulk density, mm backscatter cross section, back scatter to extinction ratio, turbulence, etc., etc....

Without exception, these empirical relations are based on mid latitude data.

Objective 1: Define these empirical relations for tropical cirrus *of all genre* (thick anvils...thin anvils...detached anvils...isolated cirrus...tropopause cirrus)

Objective 2: Use *case-dependent* empirical relationships to generate a consistent cross-platform description of individual events (e.g. Heymsfield and Palmer, 1986)

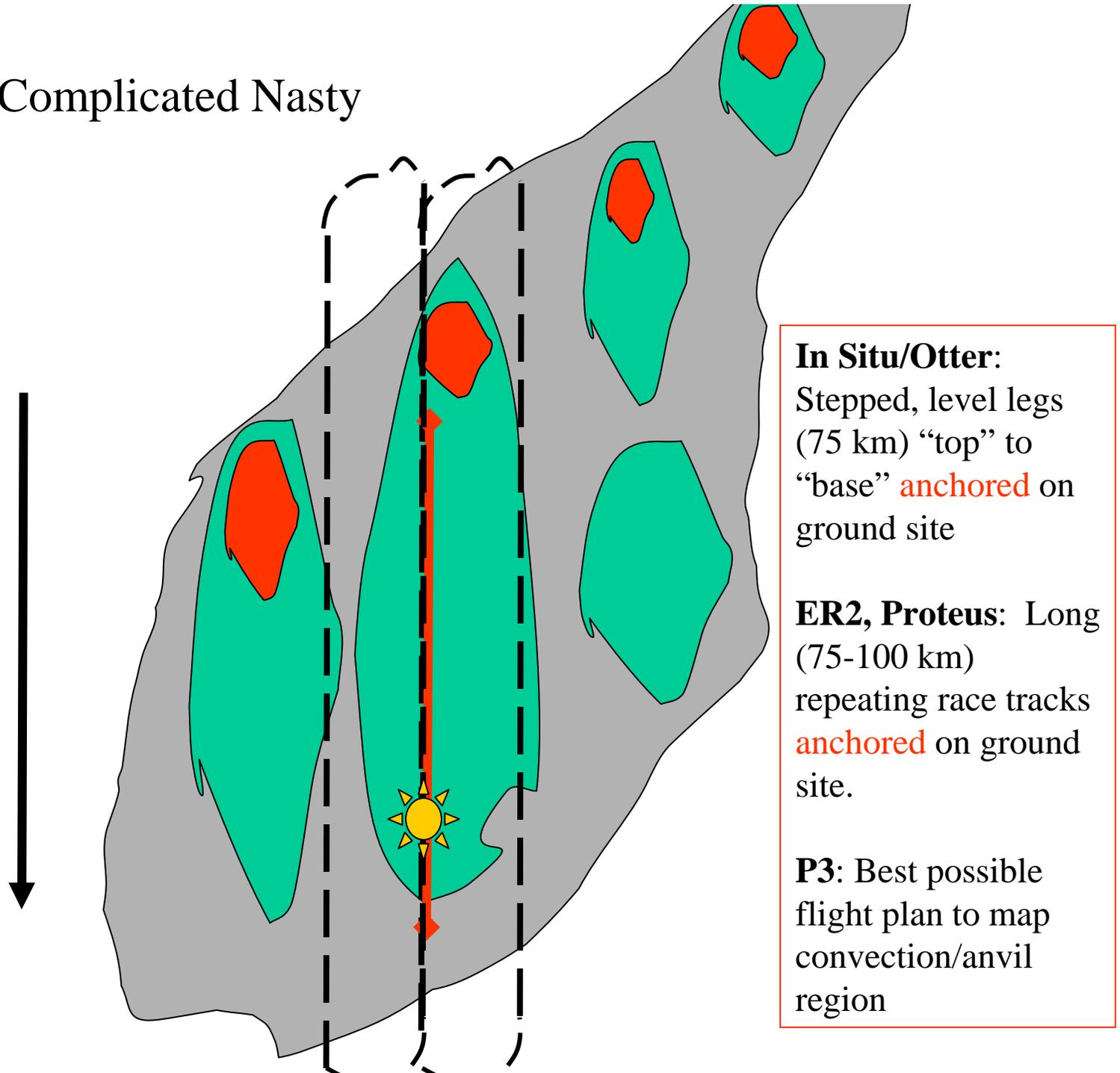
Flight Planning Issues

1. Require *Multiple* (≥ 3) well documented missions **anchored** on each ground site.
2. Require occasional spirals (at least 1 per mission) where Citation and/or WB57 simultaneously profile the IWP (I.e. Citation from base to 14 km and B57 from 14 km to cloud top).
3. Require several (~ 3) intercomparisons of probes (cloud particles, Turbulence, State).

Distinct Flight Scenarios:

- 1) **Complicated and Nasty Convection**
- 2) **Nasty and Complicated Convection,**
- 3) **Detached Anvil/Cirrus,**
- 4) **Tropopause Cirrus**

Scenario 1: Complicated Nasty Convection



Scenario 1: Complicated Nasty Convection

