2015 SHOUT
Global Hawk Flight Modules

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Global Hawk Flight Modules

On-Station Time

- ~20.0 hr
- R=0 to R=~1100 km

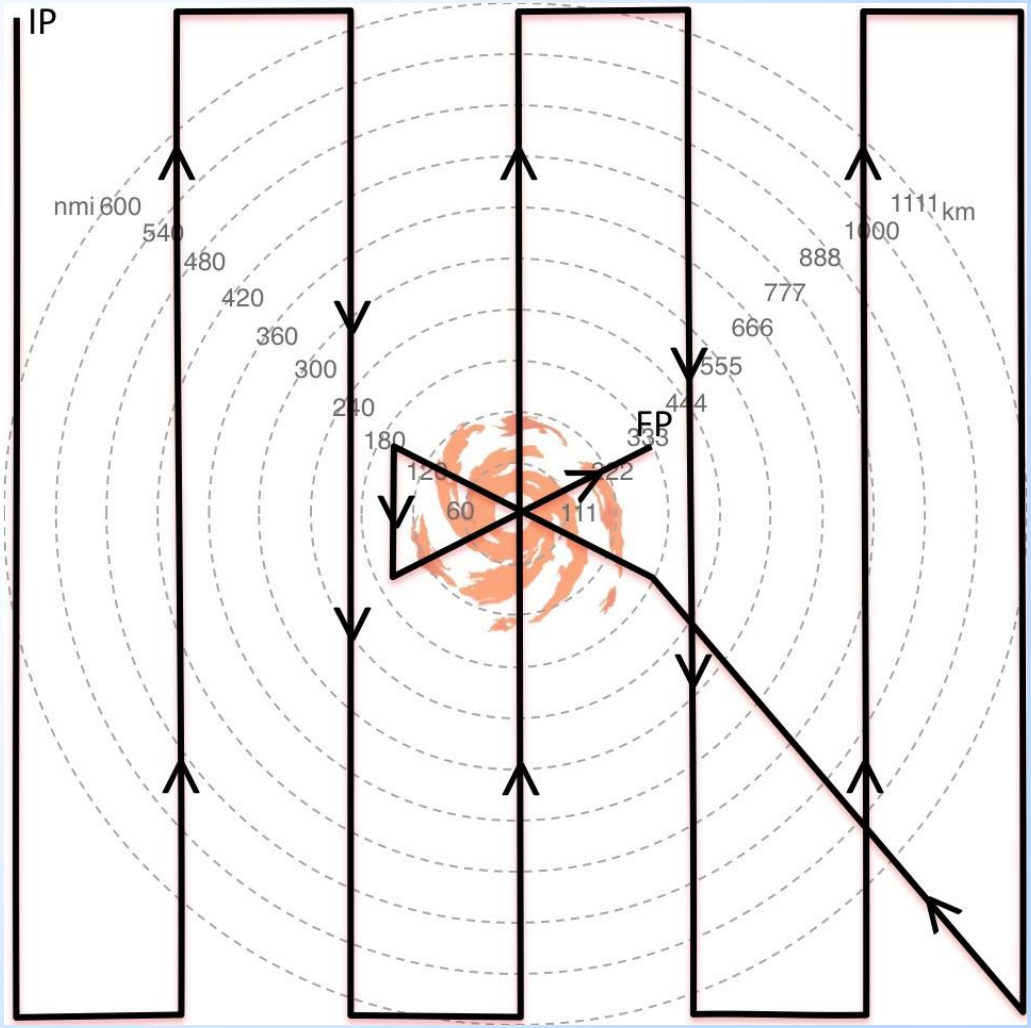
Advantages

- Far Field sampling
- Simpler navigation

Disadvantages

- Radial/Azimuthal sampling
- Long pattern
- Limited Inner core snapshots
- Radial gradients
- HAMSR & HIWRAP >> inner core

Lawn Mower (~2 deg spacing)



Global Hawk Flight Modules

On-Station Time

- ~15.5 hr
- R=0 to R=~555 km

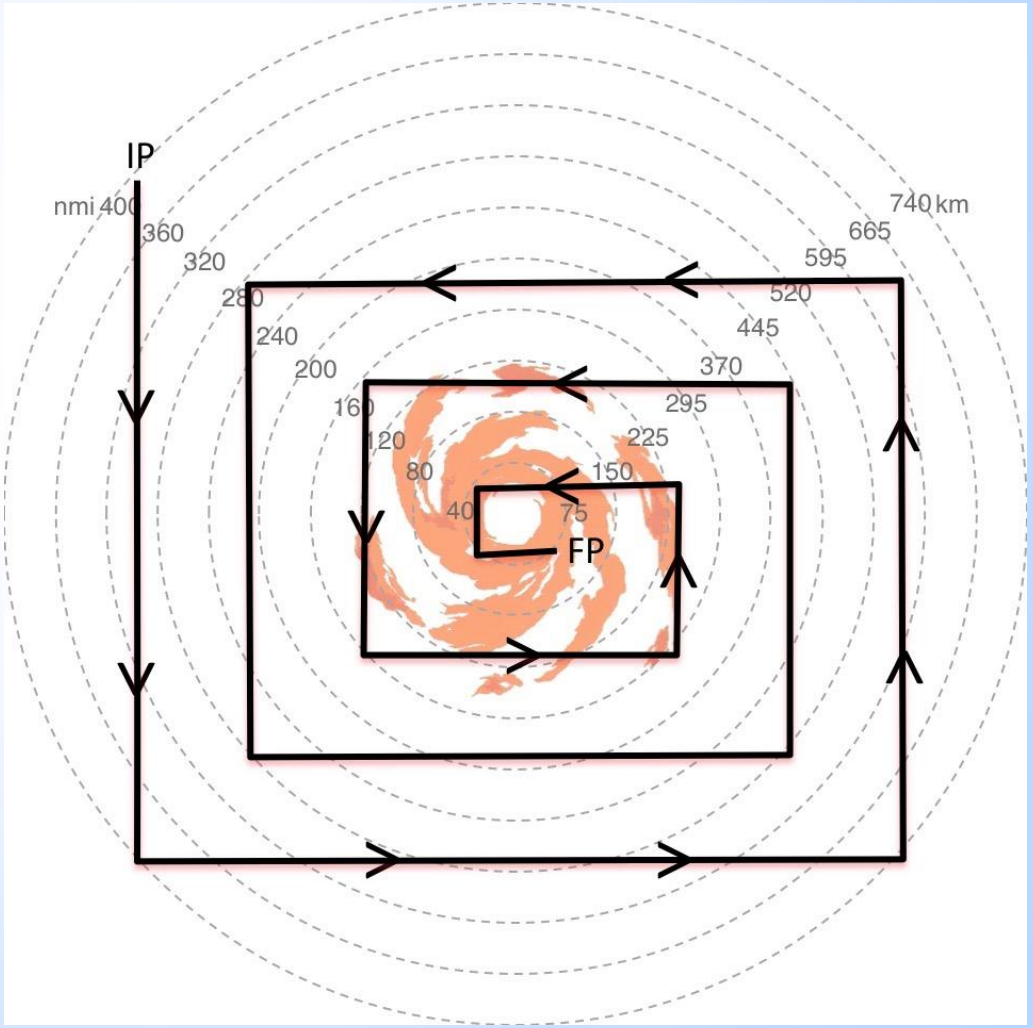
Advantages

- Inner core & envir sampling
- Uniform sampling
- Calculating budgets
- Simpler navigation

Disadvantages

- Radial sampling/gradients
- Limited Inner core snapshots
- HAMSR & HIWRAP >> limited inner core
- HIWRAP >> tight inner core turns

Square Spiral (10x10 box; 1.5 deg legs)



Global Hawk Flight Modules

On-Station Time

- ~12.5 hr
- R=0 to R=~450 km

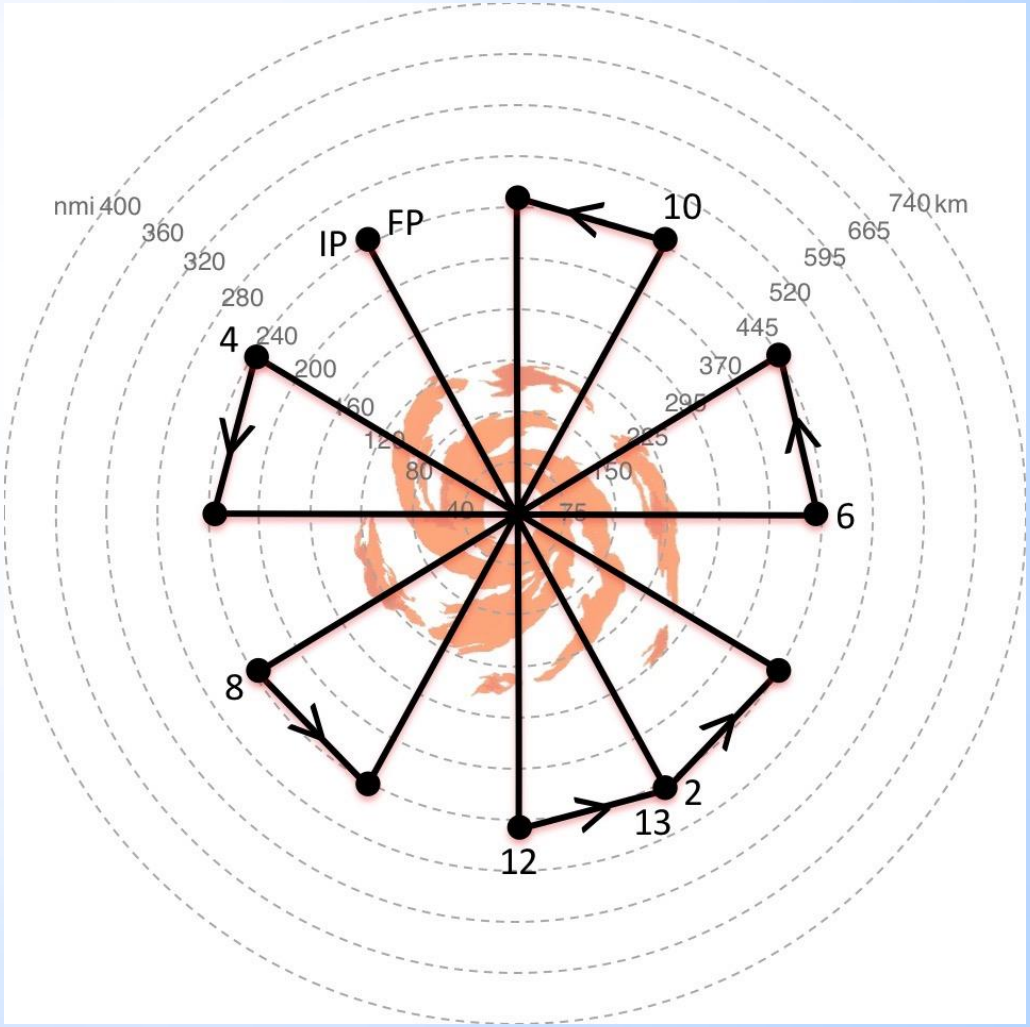
Advantages

- Radial/Azimuthal sampling
- Radial gradients
- ~ 8 center crossings
- Inner core & envir sampling
- HAMSR & HIWRAP >> inner core

Disadvantages

- Not ideal for inner core snapshots
- Far field sampling limited
- Navigating center crossings

Rotated Butterfly (30 deg)



Global Hawk Flight Modules

On-Station Time

- ~6.75 hr
- R=0 to R=~450 km

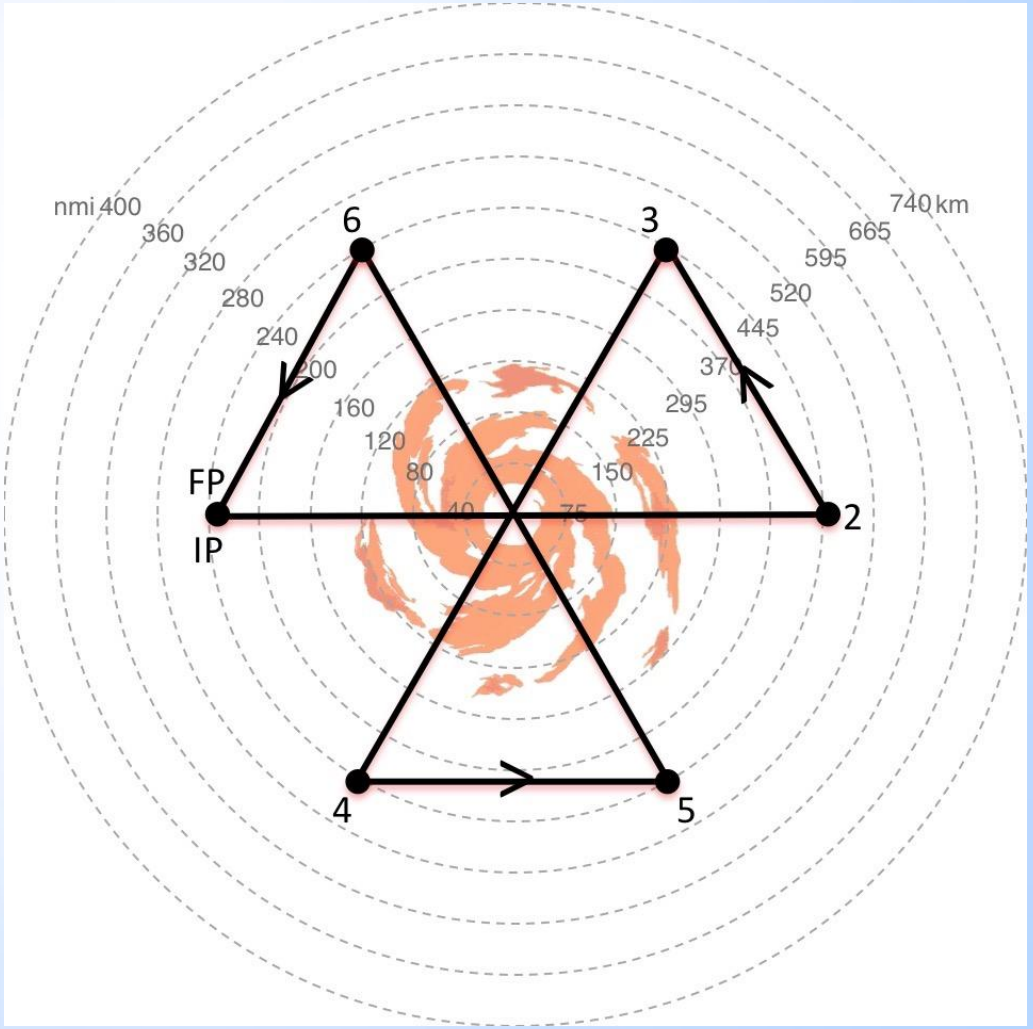
Advantages

- For limited on-station scenarios
- Radial gradients
- Inner core & envir sampling
- HAMSR & HIWRAP >> inner core

Disadvantages

- Not ideal for inner core snapshots
- Inner Core sampling limited
- Far field sampling limited
- Navigating center crossings

Butterfly



Global Hawk Flight Modules

On-Station Time

- ~10.5 hr (3.25 hr/6.75 hr)
- R=0 to R=~450 km

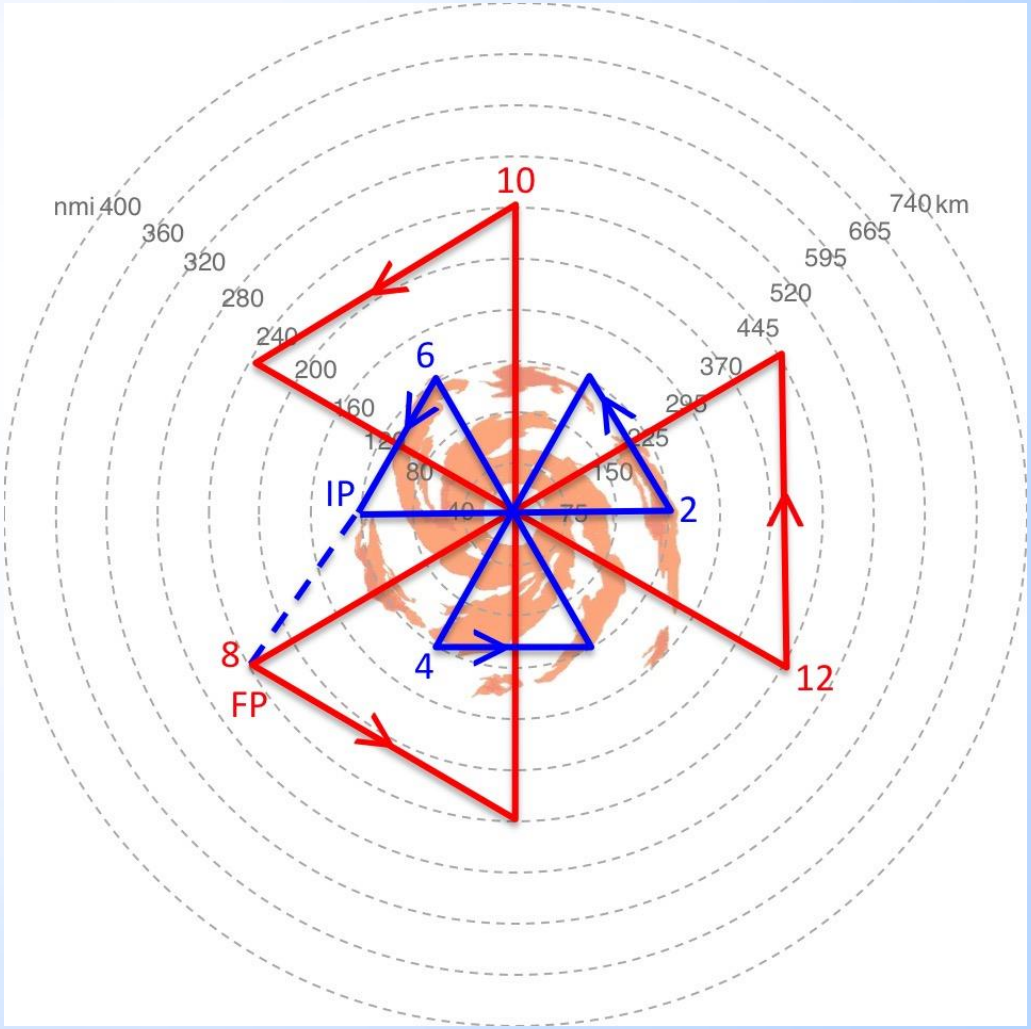
Advantages

- Radial/Azimuthal sampling
- Inner core snapshots
- Radial gradients
- 6 center crossings
- Inner core & envir sampling
- HAMSR & HIWRAP >> inner core

Disadvantages

- Far field sampling limited
- Navigating center crossings

Butterfly (small-large)



Global Hawk Flight Modules

On-Station Time

- ~10.5 hr (3.25 hr/6.75 hr)
- R=0 to R=~450 km

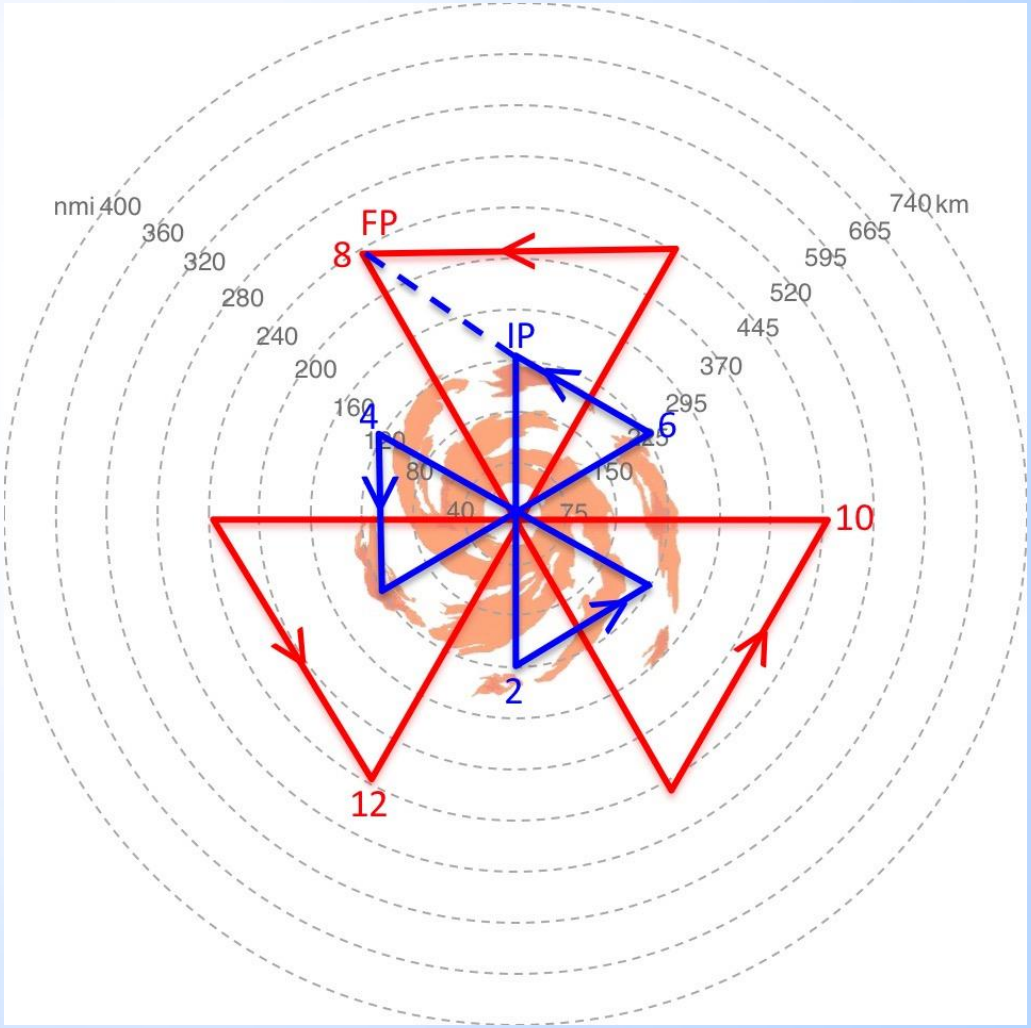
Advantages

- Radial/Azimuthal sampling
- Inner core snapshots
- Radial gradients
- 6 center crossings
- Inner core & environ sampling
- HAMSR & HIWRAP >> inner core
- Poleward FP >> outflow
- Equatorward outflow sampling

Disadvantages

- Navigating center crossings

Butterfly (small-large-outflow)



Global Hawk Flight Modules

On-Station Time

- ~14.0 hr (3.25 hr/6.5/3.0 hr)
- R=0 to R=~450 km

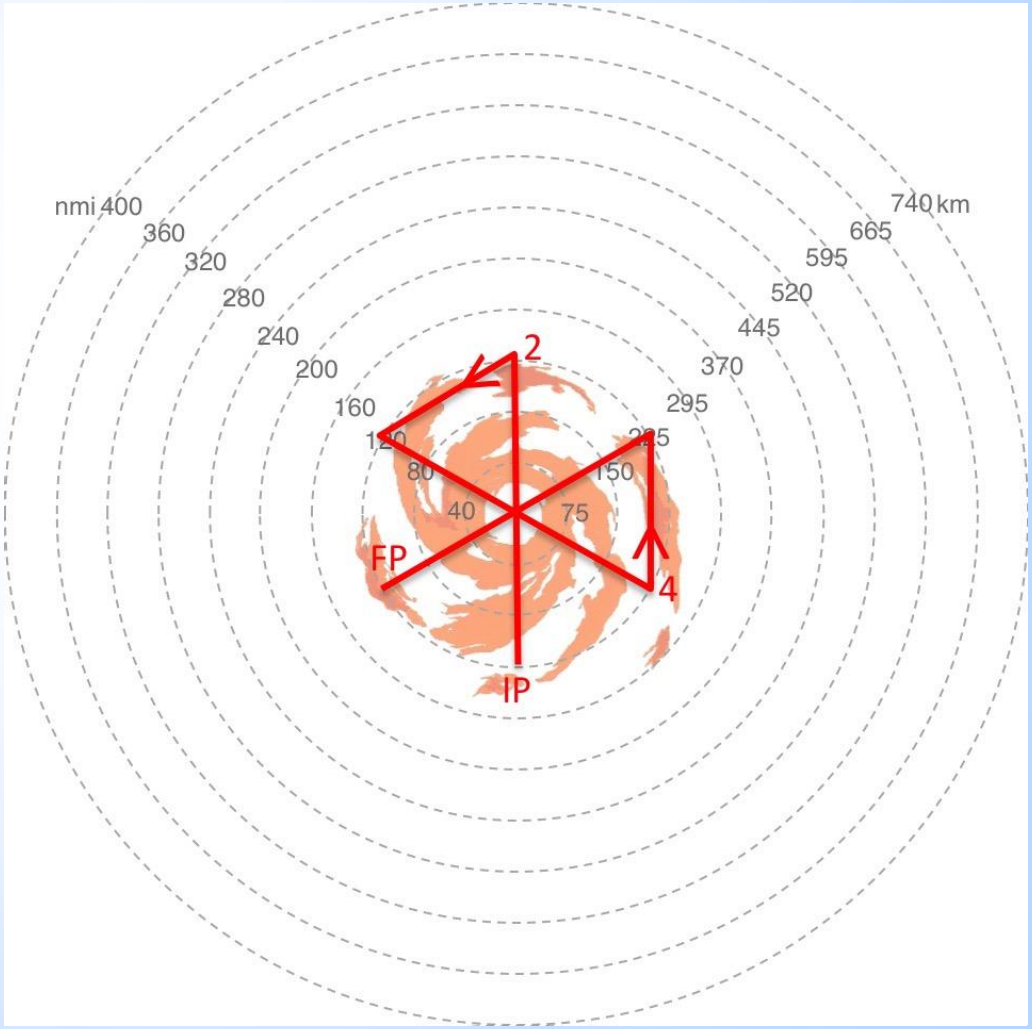
Advantages

- Radial/Azimuthal sampling
- 2 Inner core snapshots
- Radial gradients
- 9 center crossings
- Inner core & environ sampling
- HAMSR & HIWRAP >> inner core

Disadvantages

- Far field sampling limited
- Navigating center crossings

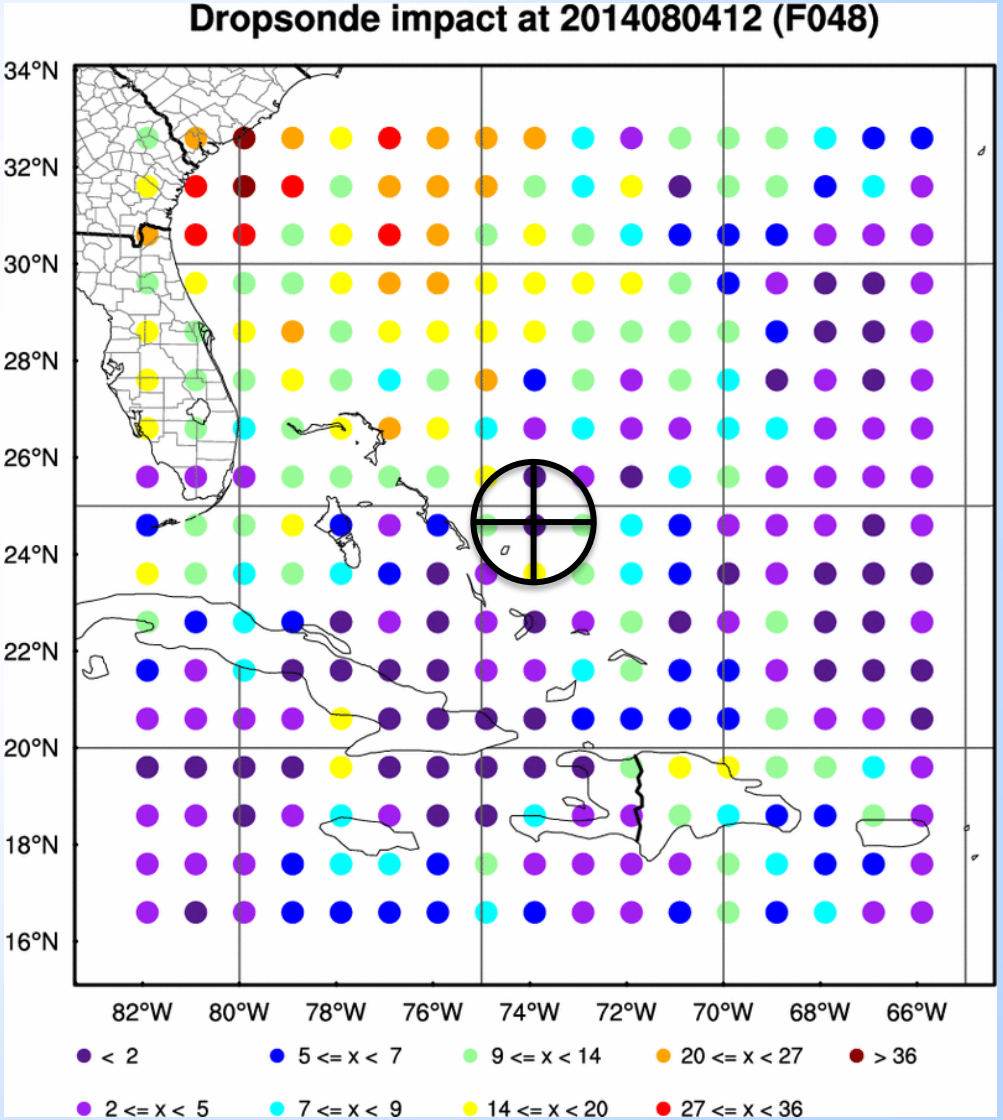
Butterfly (small-large-small)



Global Hawk Flight Modules

Adaptive Dropsonde Sampling

- Hurricane Bertha (04 Aug 2014 12 UTC)
- Hypothetical reduction in ensemble track variability at T=48 hr
- Warmer colors >> greater impact



Global Hawk Flight Modules

TC Diurnal Cycle

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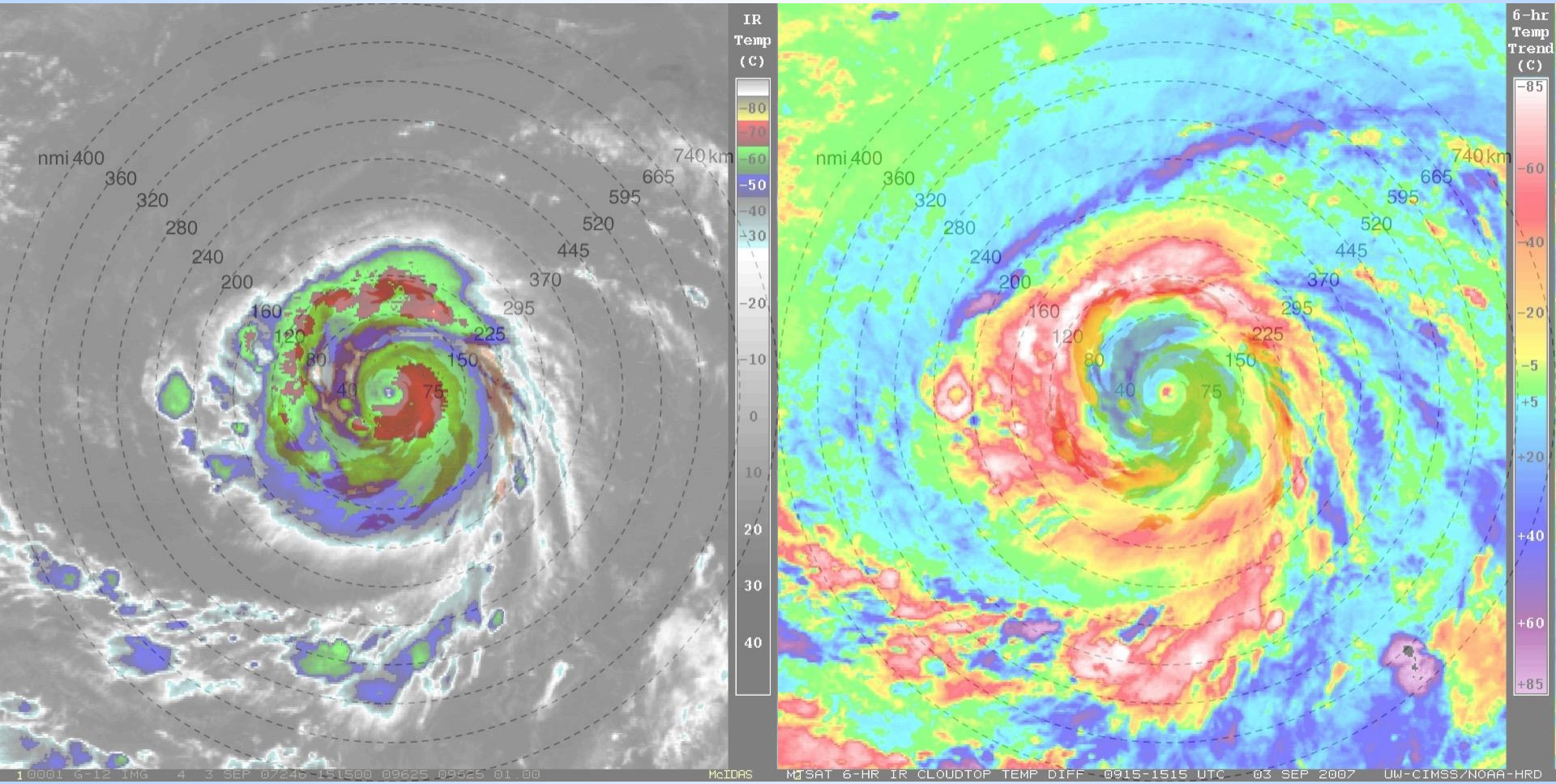
TC Diurnal Cycle (~1100-1300 LST)



Global Hawk Flight Modules

Convective Module