



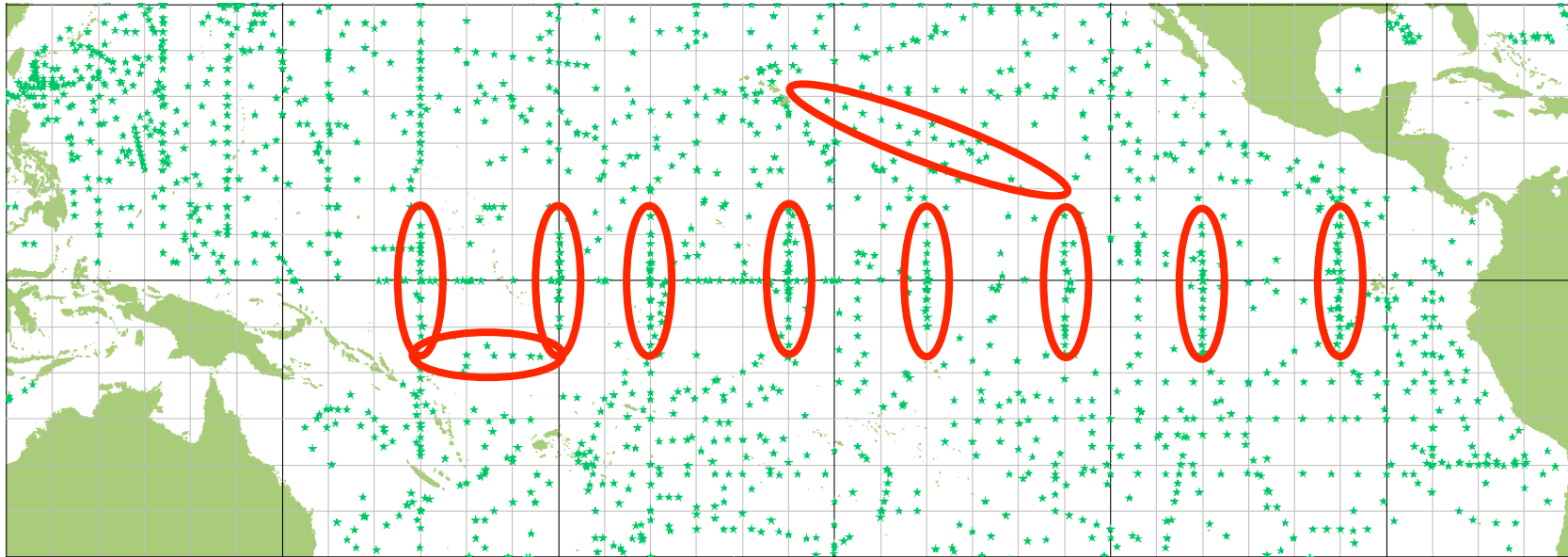
# Tropical Pacific Observing System: Argo



- Argo has made great gains in float lifetimes (> 4 years)
  - efficiencies in danger of being outstripped by inflation
  - Any further reduction in funding will degrade the system
- Argo complementary to TAO moorings
  - Resolves ~1 to 2 month time scales
  - Resolves ~5° to 10° longitude space scales
  - Resolves ~1° to 2° latitude space scales
  - Quasi-Lagrangian, not Eulerian
  - (excellent vertical resolution, salinity, & data to 2000 dbar)
- Many Argo float deployments from TAO mooring cruises
  - Argo deployments benefit from maximal spatial coverage
- Iridium Floats: upgrade for logistics and science
  - ~15 minutes on surface & 1000 points in vertical



# Tropical Pacific Deployments

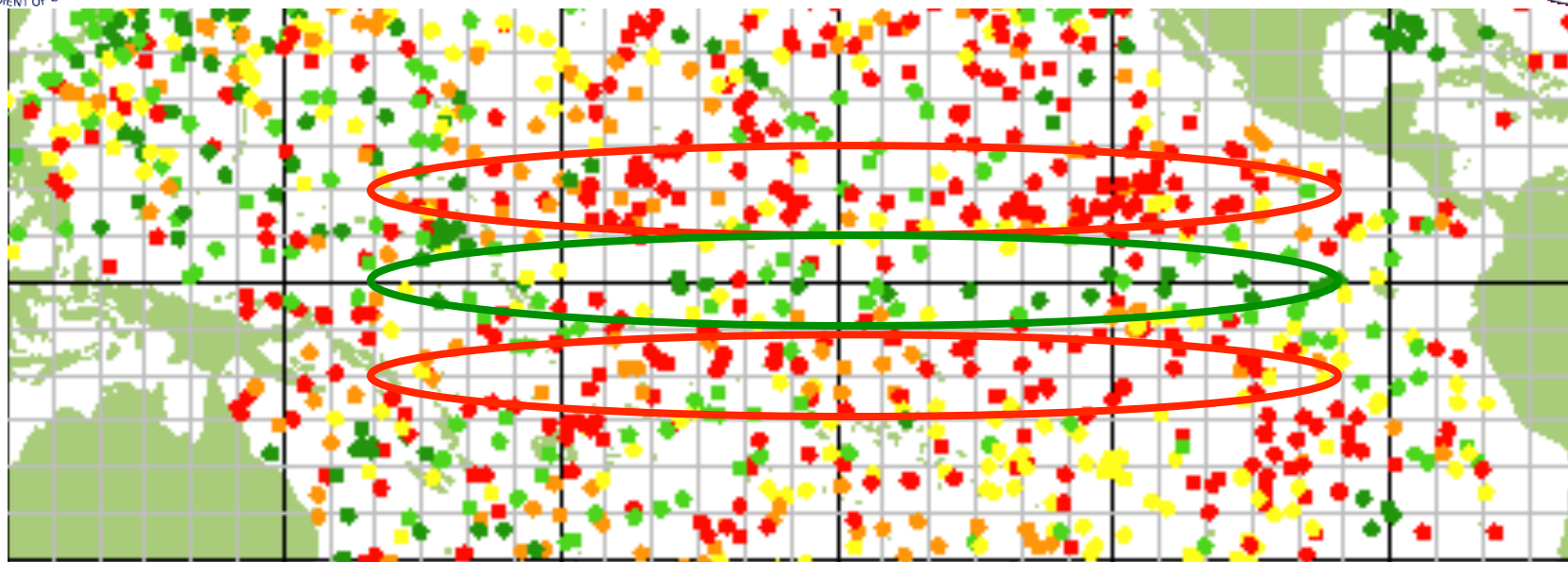


- Many deployments along TAO longitudes
  - Also on transits between mooring
  - Also on transits to/from ports
- Argo clearly benefits from buoy tender visits
- Wide spatial coverage more important than frequent temporal visits from Argo deployment perspective.





# Float Distribution & Age

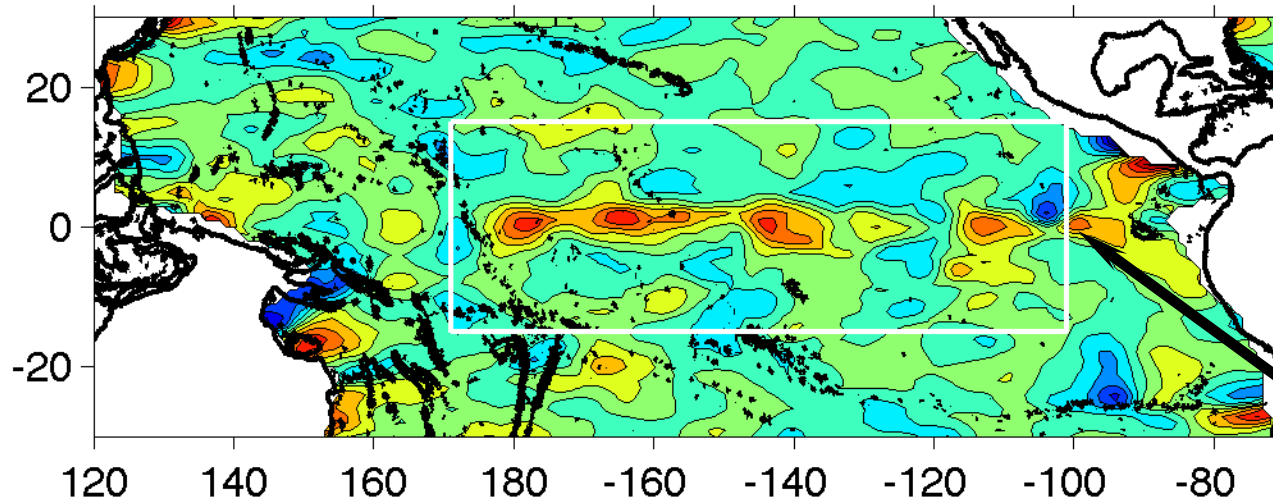


- Strong zonal currents 15 deg spacing -> 3 deg.
- Colored by ages
  - Red > 4 years
  - Green < 1 year
- Many equatorial deployments
- Many older floats at  $\pm 5^\circ$  latitude
- Fewer and younger floats on the equator
  - Result of strong surface divergence

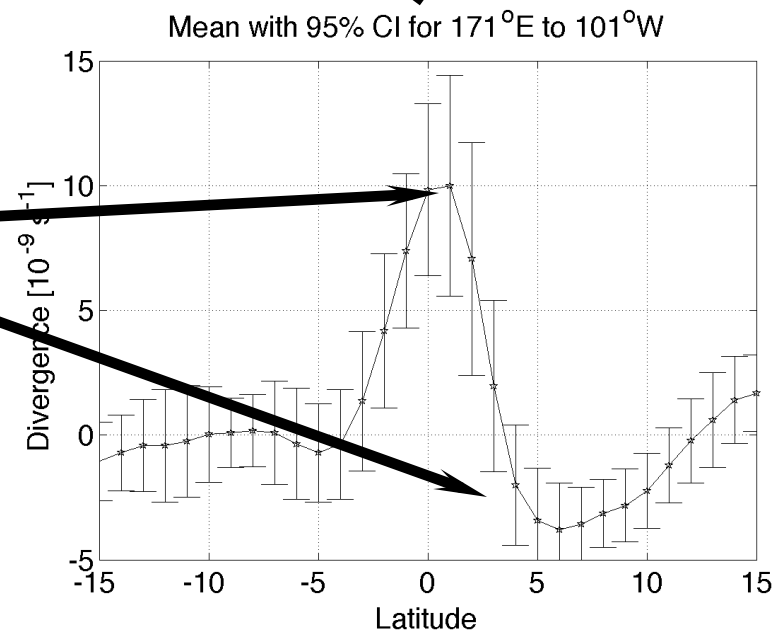




# Iridium Floats on Equator



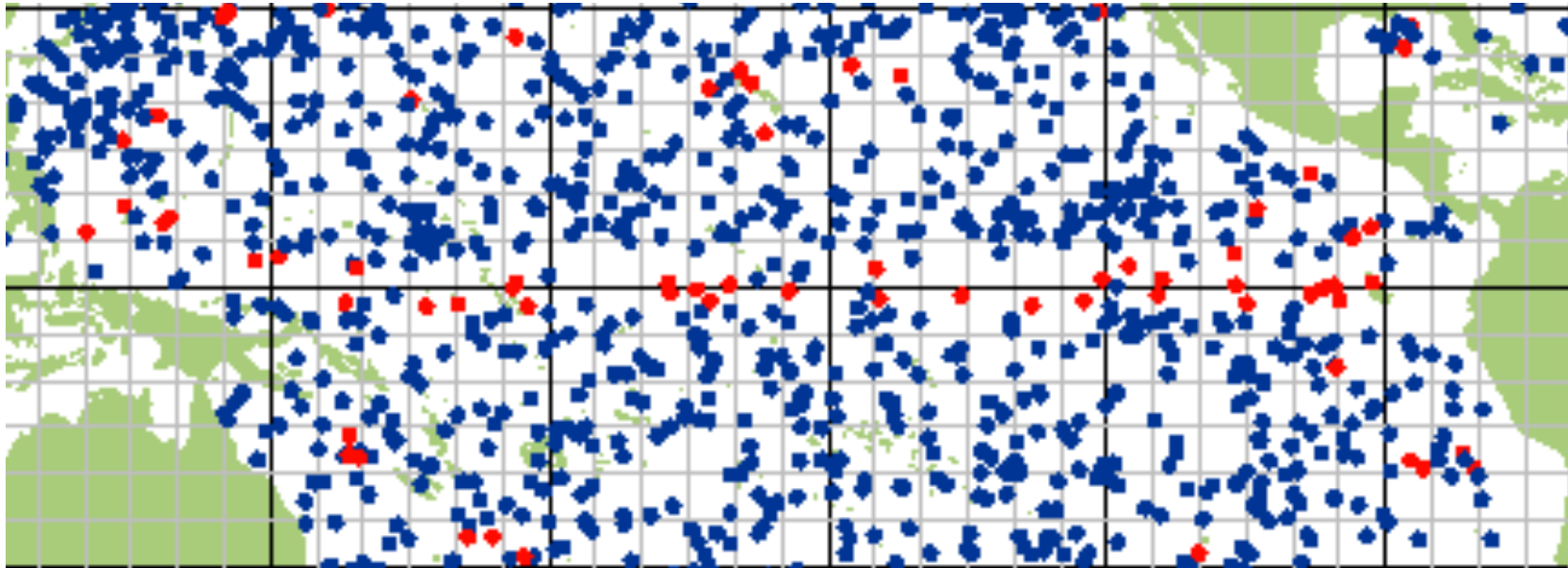
- Equatorial Pacific Surface Divergence
  - > Float Divergence (see above)
- Inverse of mean float divergence
  - 3 years on equator (floats leave)
  - 8 years at 6°N (floats accumulate)
- Service Argos floats
  - ~9 hours on the surface
  - ~72 points in vertical
- Iridium Floats
  - ~15 minutes on surface
  - ~1000 points in vertical







# Tropical Pacific Telecom.

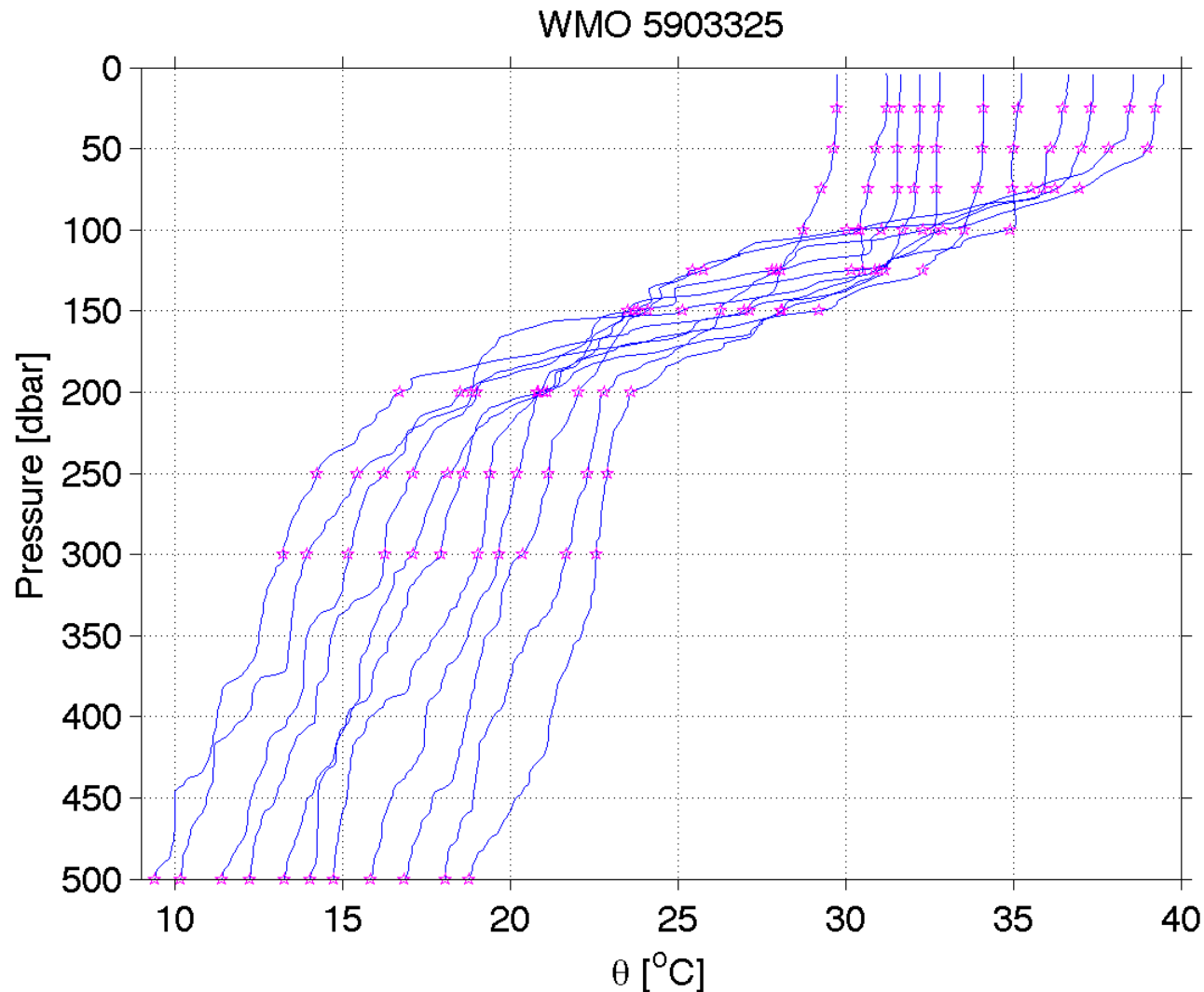


- Blue = Service Argos (> 9 hours surface time)
- Red = Iridium (~15 minutes surface time)
- Many Iridium floats on the equator
  - Mostly young, but some old
  - Have not left equator yet
  - Some dispersion from equatorial source





# Argo Tropical Pacific Data

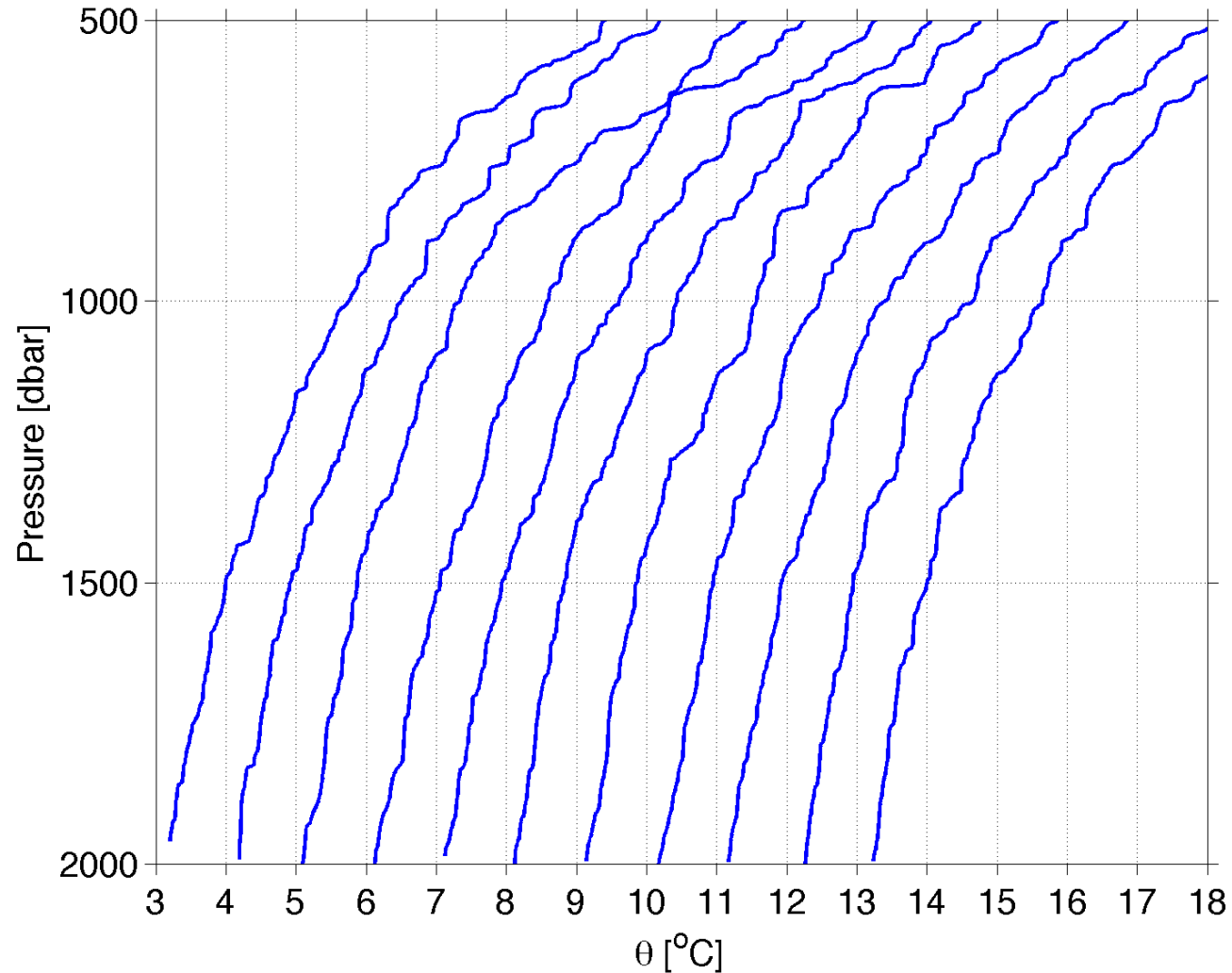


- Upper 500 m of data for float near equator,  $150^{\circ}\text{W}$
- Nominal TAO mooring instrument depths in magenta stars.
- Note high vertical resolution of Argo data (also salinity not shown)



# Tropical Pacific Data

WMO 5903325



- Complex, energetic strain field below 500 dbar – better sampled than shipboard CTD
  - internal waves - mixing
  - equatorial deep jets – energy propagation



# Tropical Pacific Observing System: Argo



- Argo efficiencies have been achieved (> 4 year lifetimes)
  - Now in danger of being outstripped by inflation
  - Any further reduction in funding will degrade the system
- Many Argo float deployments on TAO mooring cruises
  - Argo deployments benefit from maximal spatial coverage
- Iridium Floats: upgrade for logistics and science
  - ~15 minutes on surface & 1000 points in vertical
  - Allows us to keep floats on equator -> less frequent visits OK
  - More interesting science possible