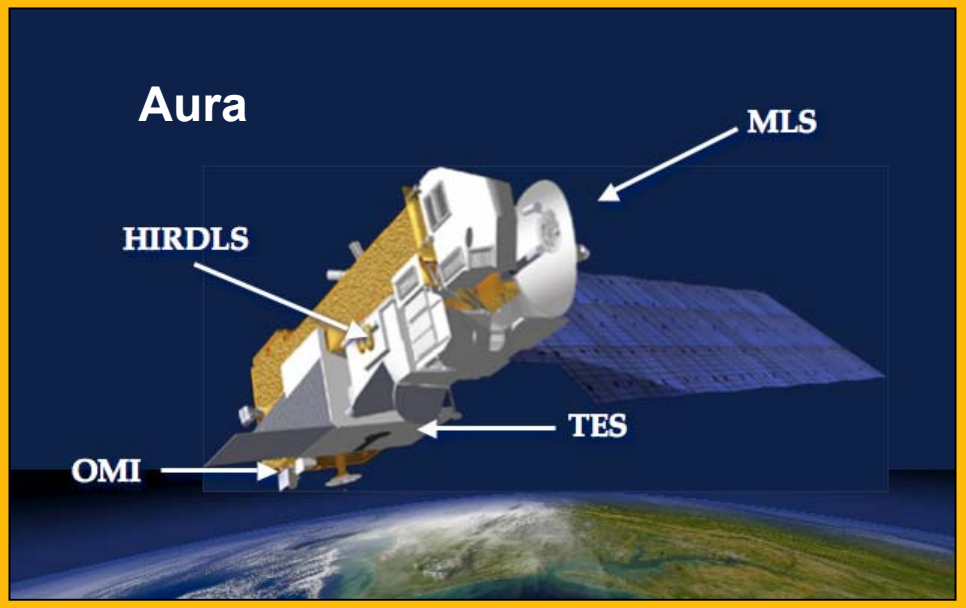
Satellites & Priority Chemicals

Strat-O_3

O_3, NO_2, HCHO, SO_2, Aerosol



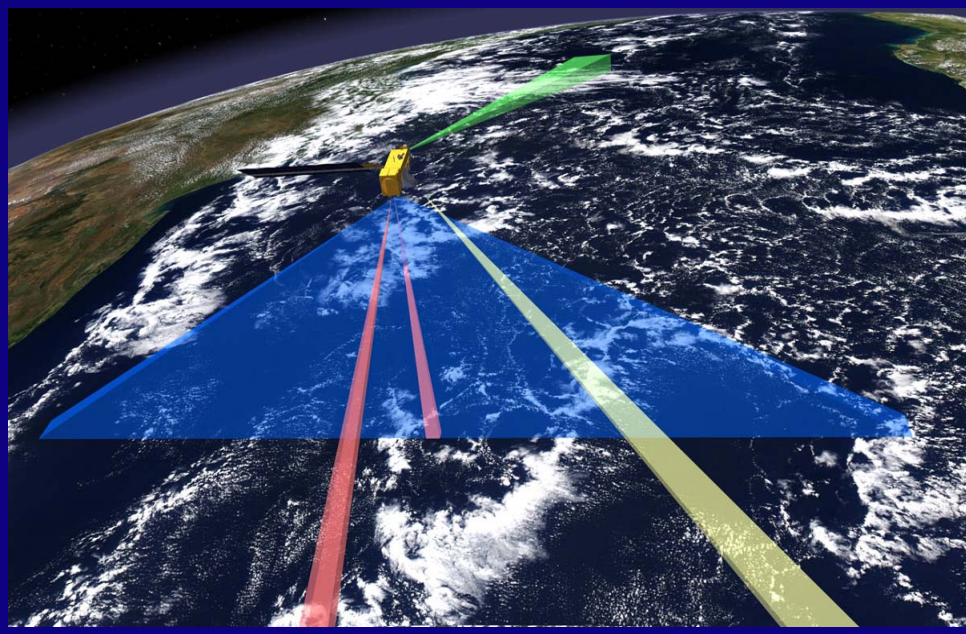
CO, O_3, H_2O, HCN (UT/LS)

O_3, CO, HNO_3

Satellite Platform*	Instruments	Some key data products	Vert. resol.
Aura: http://eos-aura.gsfc.nasa.gov/	TES OMI MLS	CO, CH_4, O_3, HNO_3, NO_2 O_3, NO_2, SO_2, HCHO H_2O, HCN, CO	Trop col./4 km Trop column UT/LS
Aqua: http://eos-pm.gsfc.nasa. gov/	MODIS AIRS	Aeorosol optical depth CO	Trop column Trop col./4 km
Terra: http://eos-am.gsfc.nasa.gov/	MOPITT MISR MODIS	CO Aeorosol optical depth Aeorosol optical depth	Trop col./4 km Trop column Trop column
Envisat: http://envisat.esa.int/	SCIAMACHY MIPAS	O_3, NO_2, CH_2O Trace organics	Trop column UT/LS
Calipso: http://www.calipso.larc.nasa. gov/	CALIOP	Aeorosol distribution	High resolution

SAT-Flight planning considerations?

- Satellite tracks and instrument swaths to be integrated with INTEX-B forecasts
- Definition of priorities
  - Aura instruments?
  - along track vs column?
  - timed profiles?
  - strat/trop balance?
  - day/night?
  - other satellites?
- Definition of INTEX-B preferences from TES

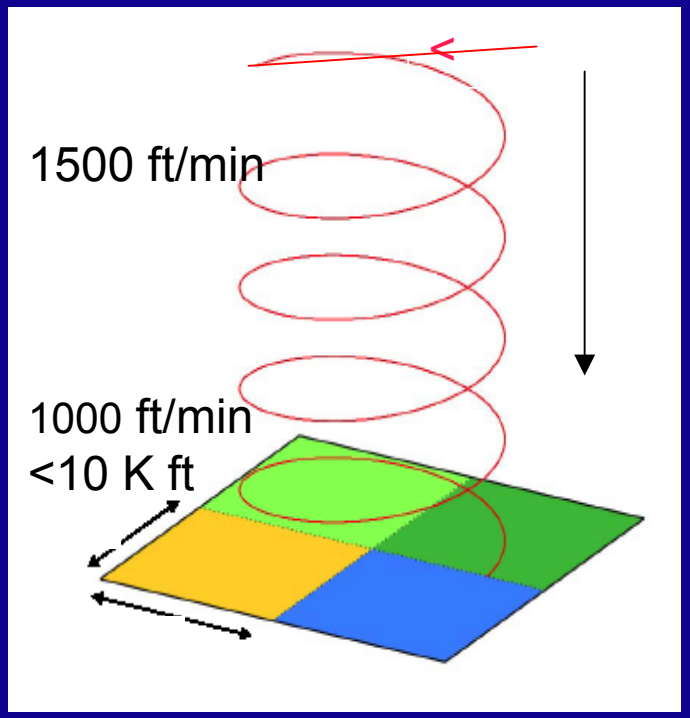


INTEX-B DC-8 Satellite Validations

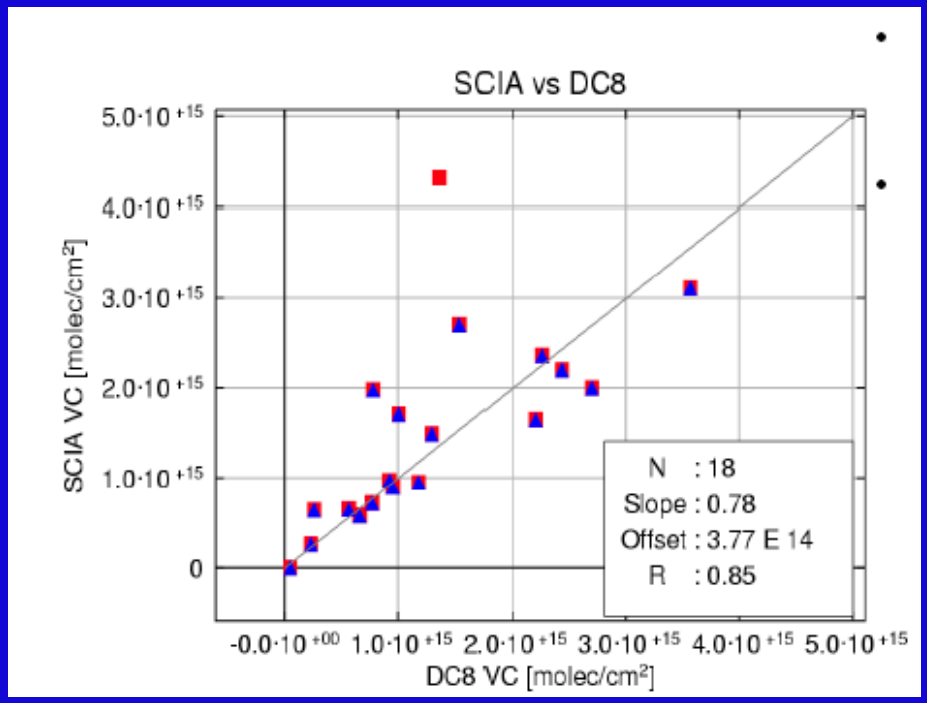
(TES, OMI, MLS, HIRDLS, AIRS, MODIS, MOPITT, MISR, SCIA, Calipso)

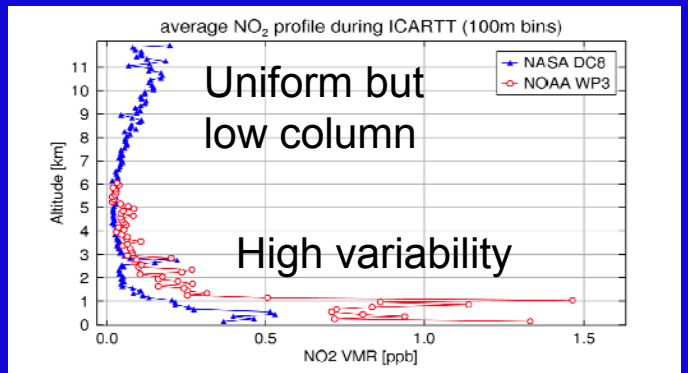
(CO, O_3, $HCHO$, NO_2, Aerosol, HNO_3, SO_2, H_2O, HCN, Organics)

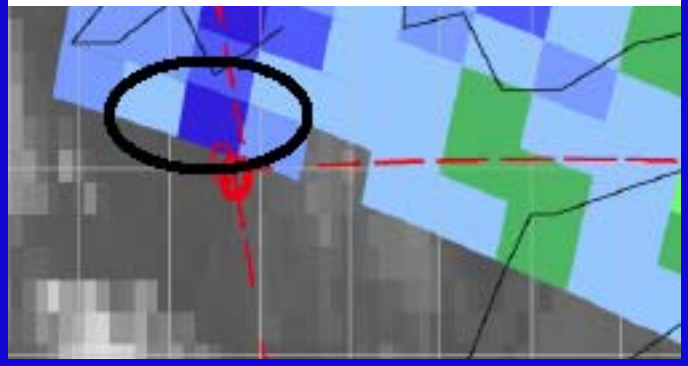
- **Coincident along track observations in UTLS & lidar curtains in strat and trop**
- **Coincident vertical profile in polluted & clean Trop (0-12 km)**
- **Limb & cross swath observations in UTLS**
  - **Variety of surface features**
  - **Cloud free conditions**
  - **Day and night**



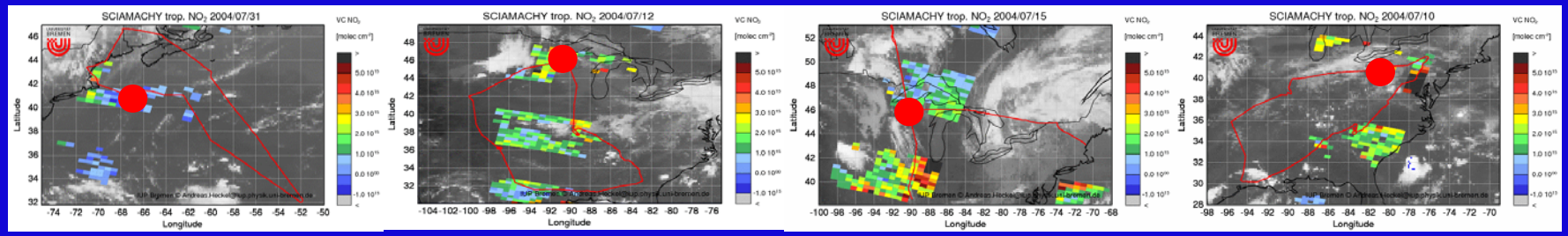
DC-8/SCIAMACHY Trop Column NO_2

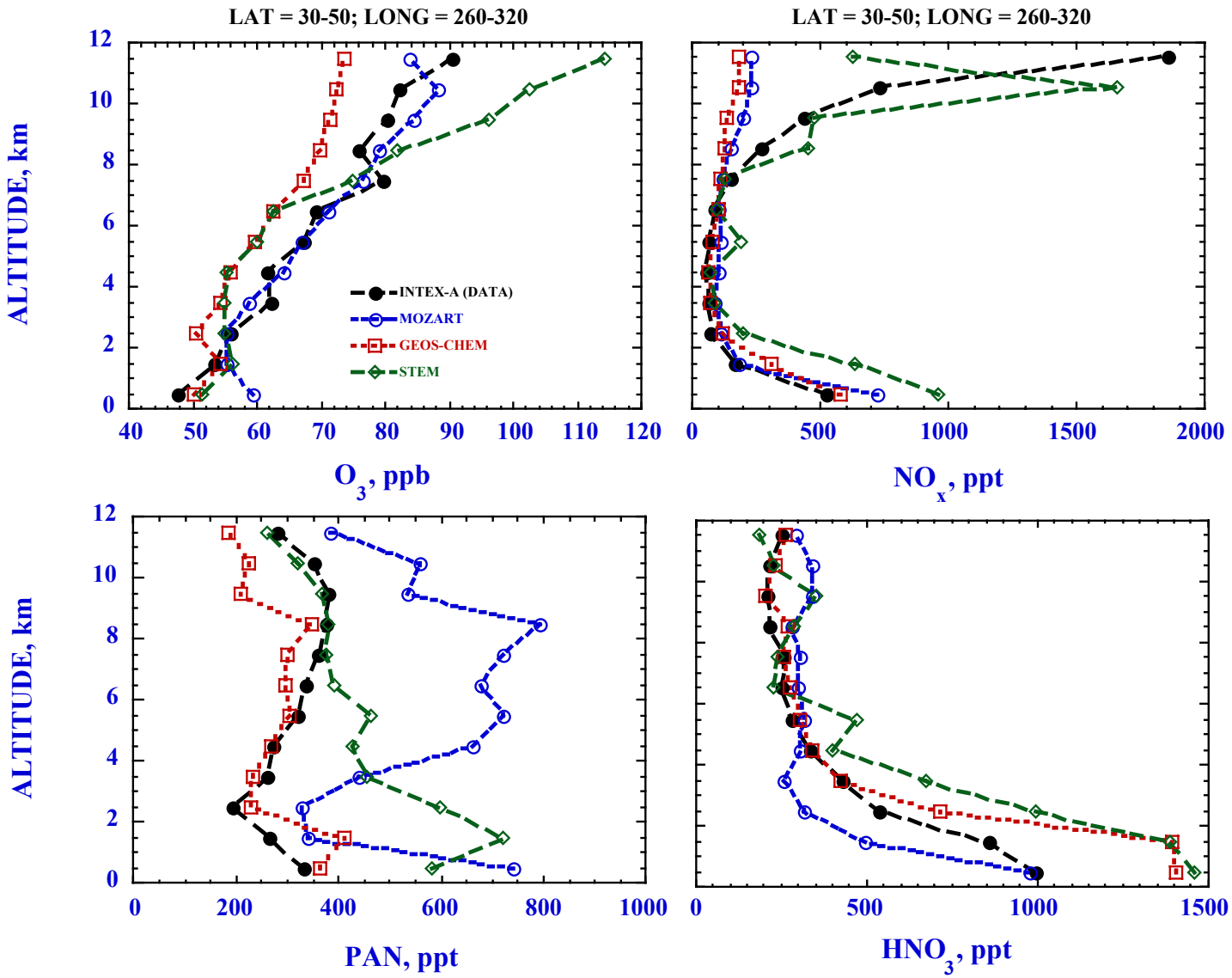






7/31 7/12 7/15 7/10



Heckel et al.

O_3 and Reactive Nitrogen vs models