Detection of Boundary Layer Trace Gases

OMI Products: **NO_2, TCO, SO_2, H_2CO**

Issues for AQ:

a) Instrument relatively low sensitivity to boundary layer

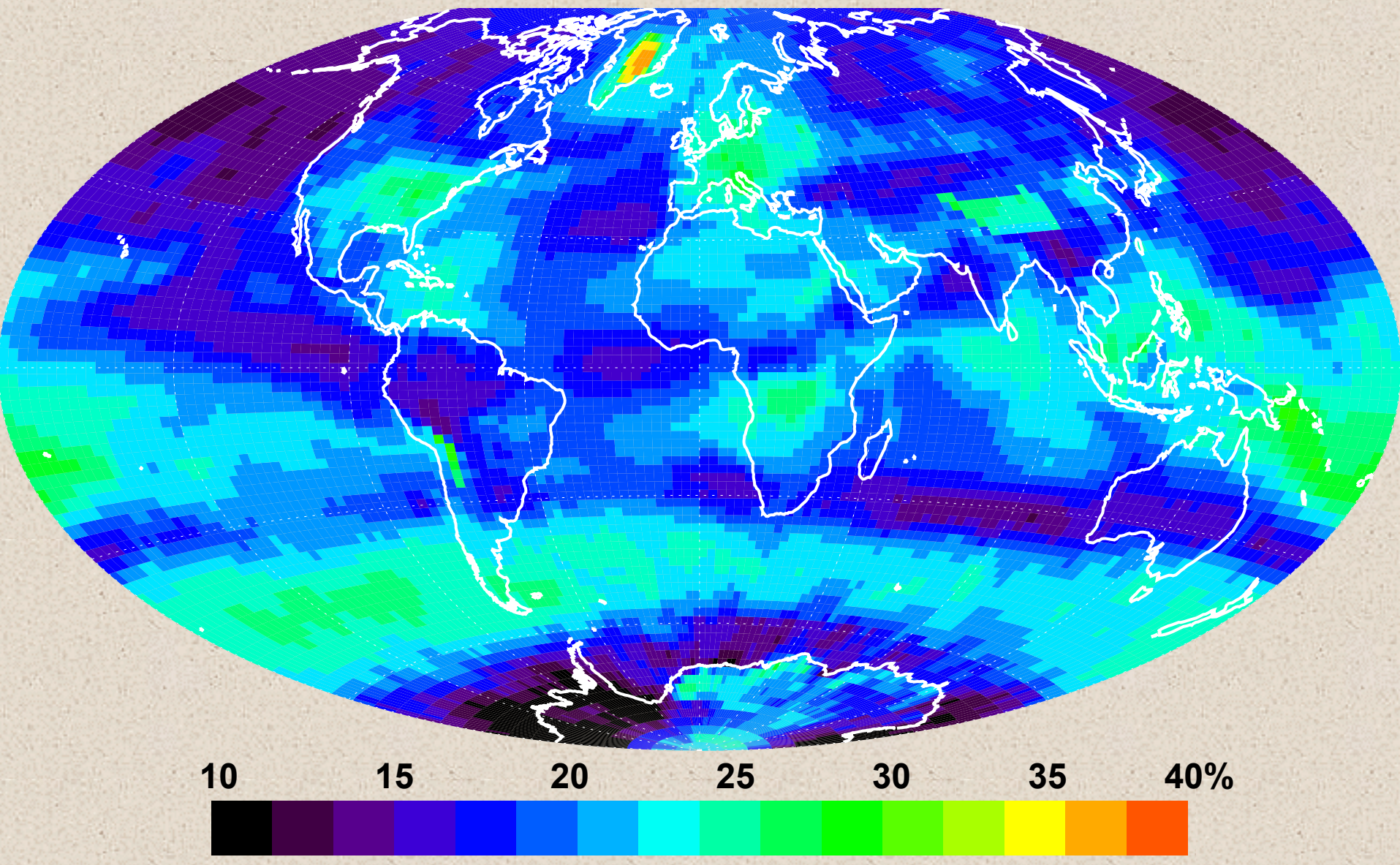
b) Uncertainties associated with subtraction of non-boundary layer part of column

Hard questions:

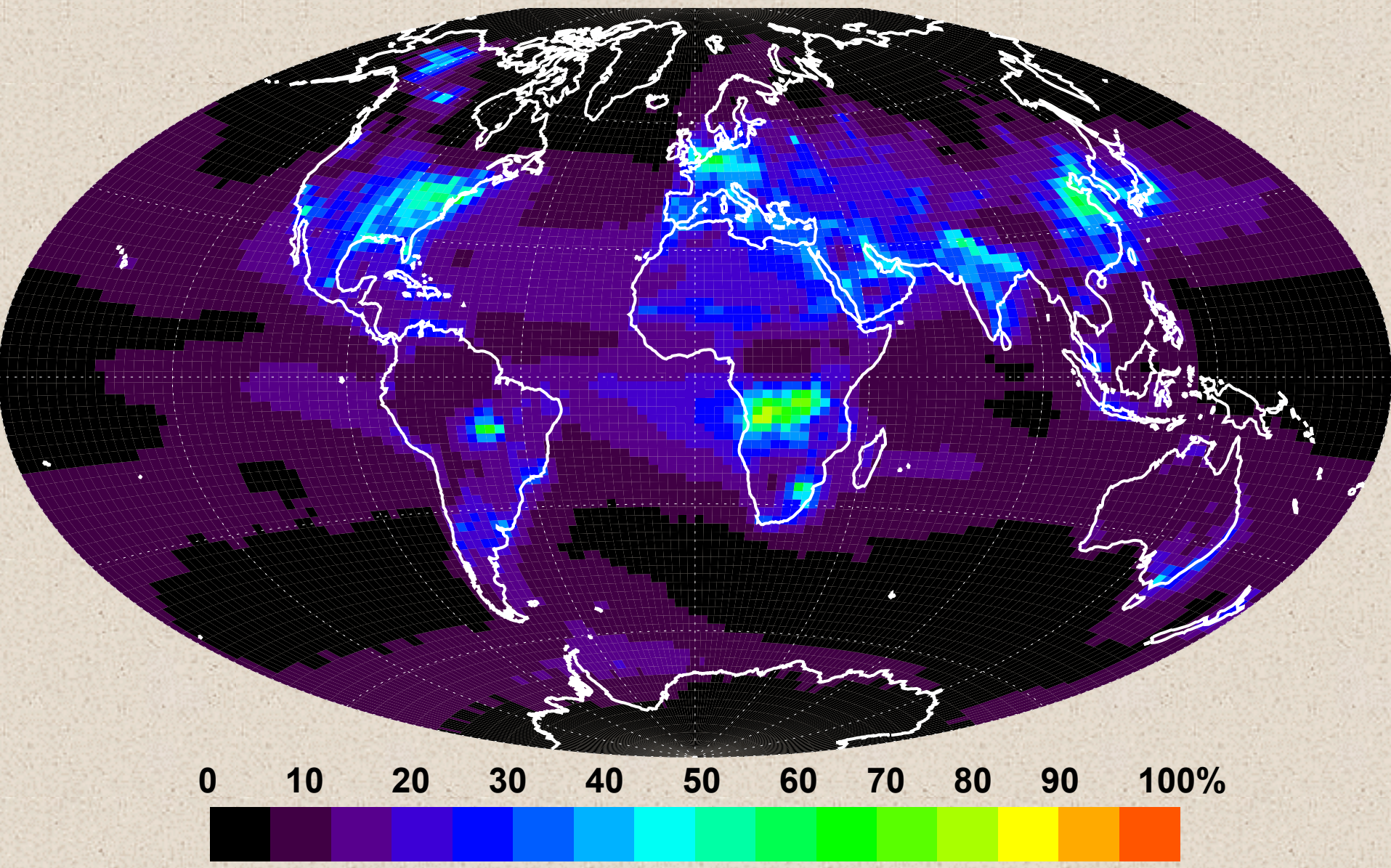
OMI NO_2, H_2CO, SO_2 – just cool pictures or can useful information on emissions be derived?

Can satellite data be used to track pollutant plumes that impact AQ far downwind?

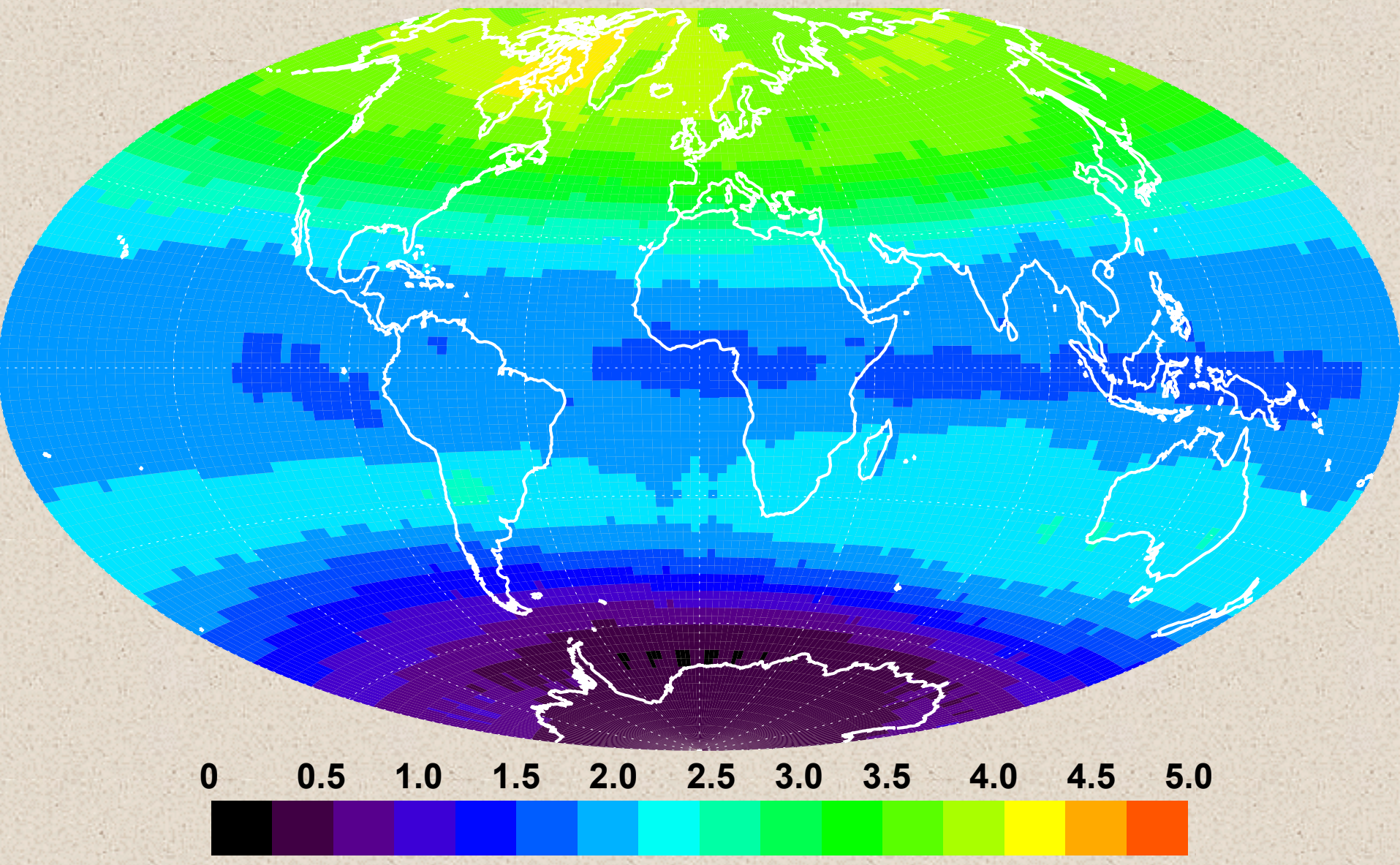
GMI CTM: Boundary Layer/Tropospheric Column Ozone - July 2001



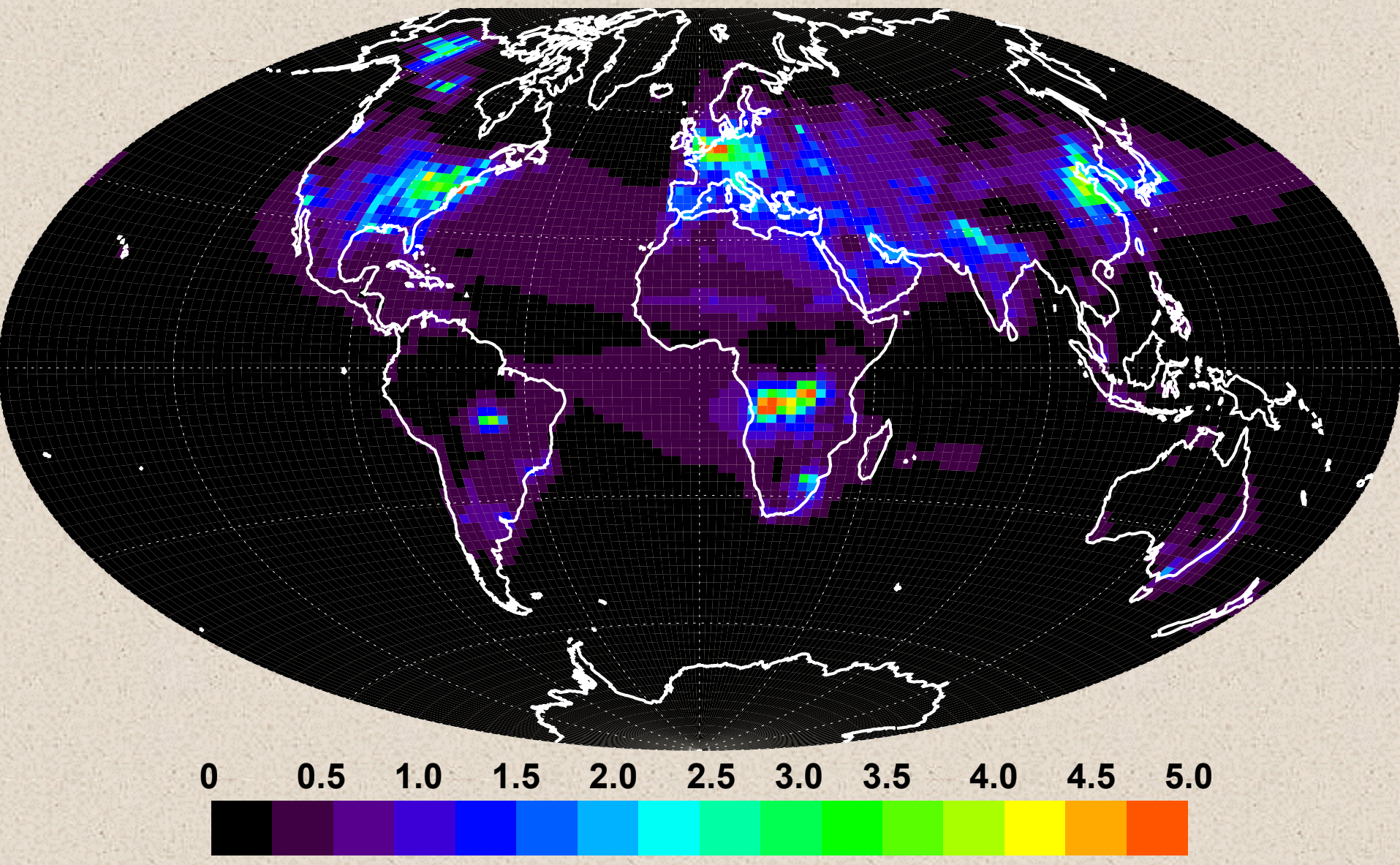
GMI CTM: Tropospheric/Total NO_2 Column
July 2004



GMI CTM: Stratospheric NO_2 Column ($x10^{15}$ molec/cm^2) - July 2004



Some Thoughts for AQ: OMI

- SO_2 – may be too noisy
- NO_2 – stratospheric column is large with zonal variability
- TCO – free tropospheric ozone is too variable & large, masking BL signal – definition of tropopause tricky.
- All Trace Gases: Relatively low instrument sensitivity to BL

GMI CTM: Tropospheric NO_2 Column ($x10^{15}$ molec/cm^2) - July 2004