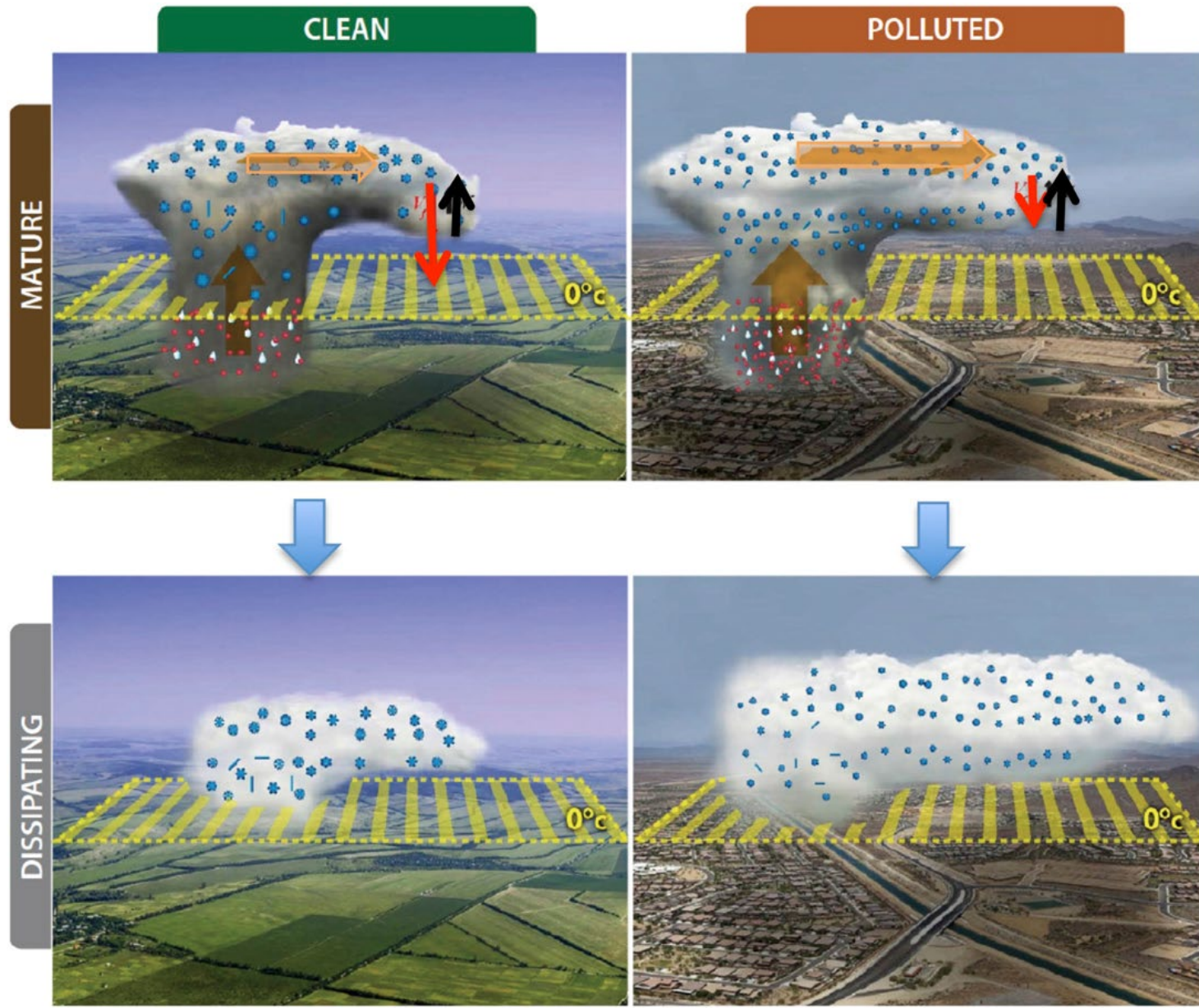


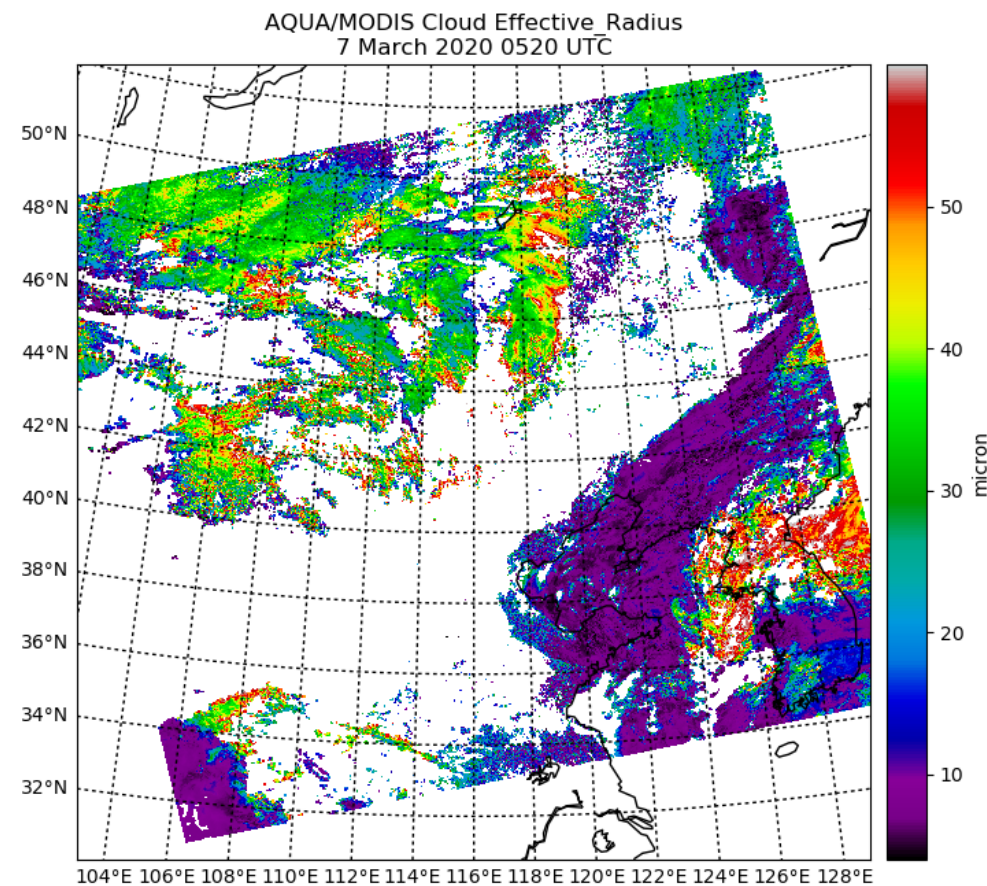
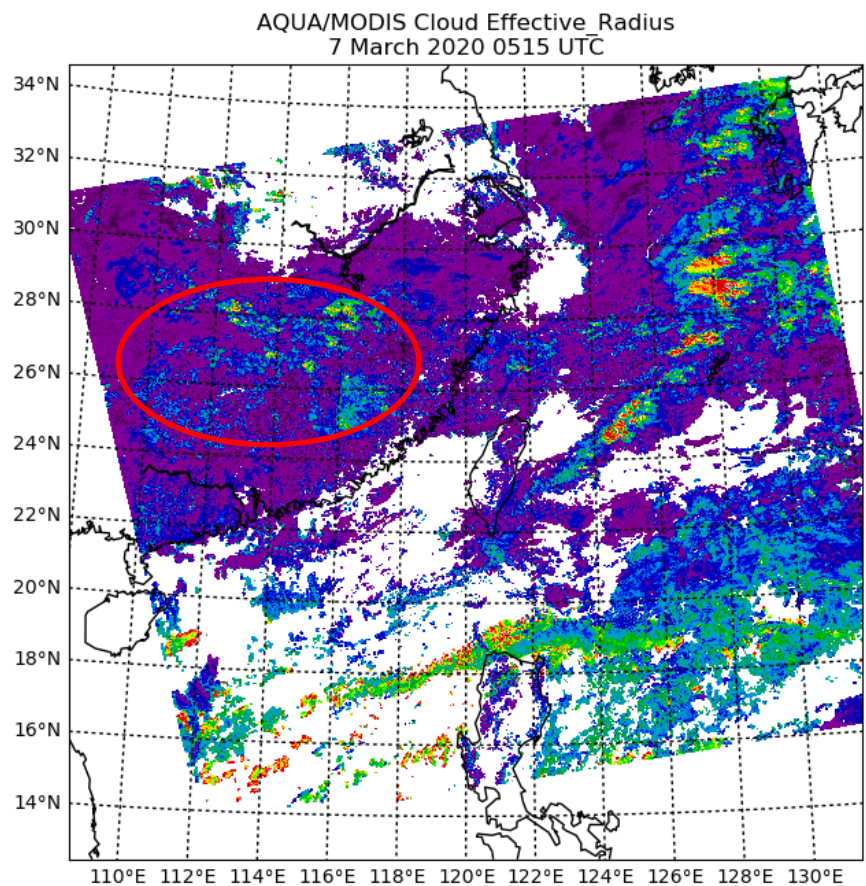
Conceptual Model of Cloud Invigoration



Early March Cloud Properties – AQUA/MODIS



1315 LST

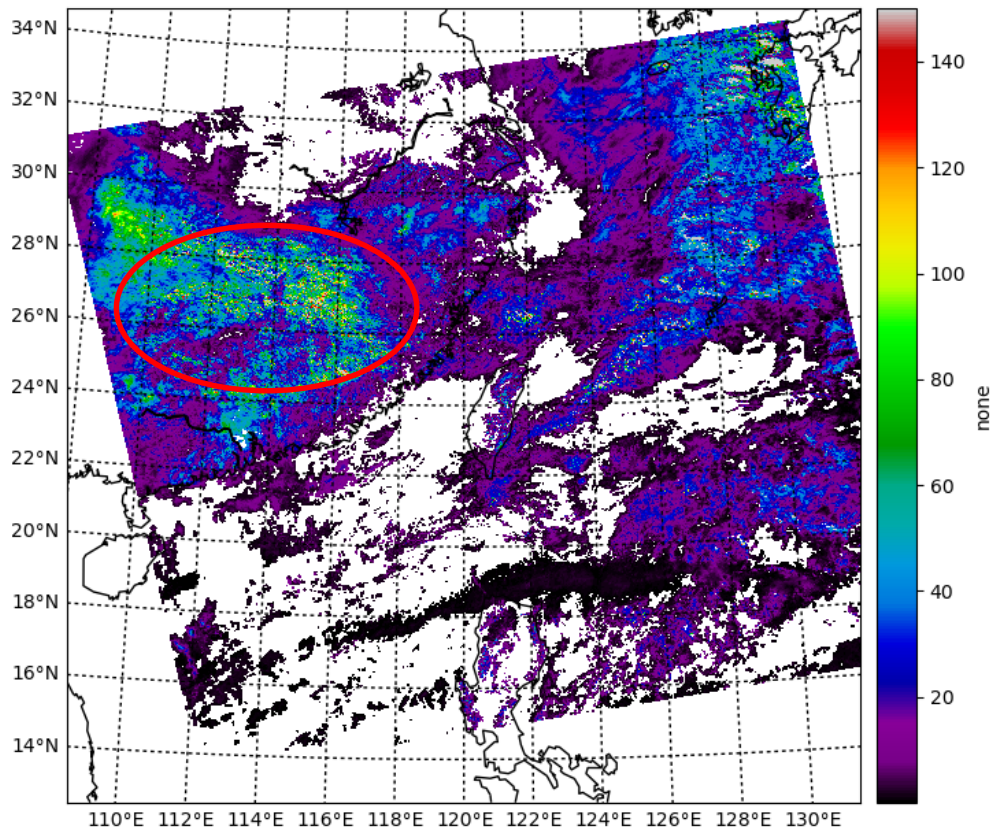


Early March Cloud Properties – AQUA/MODIS

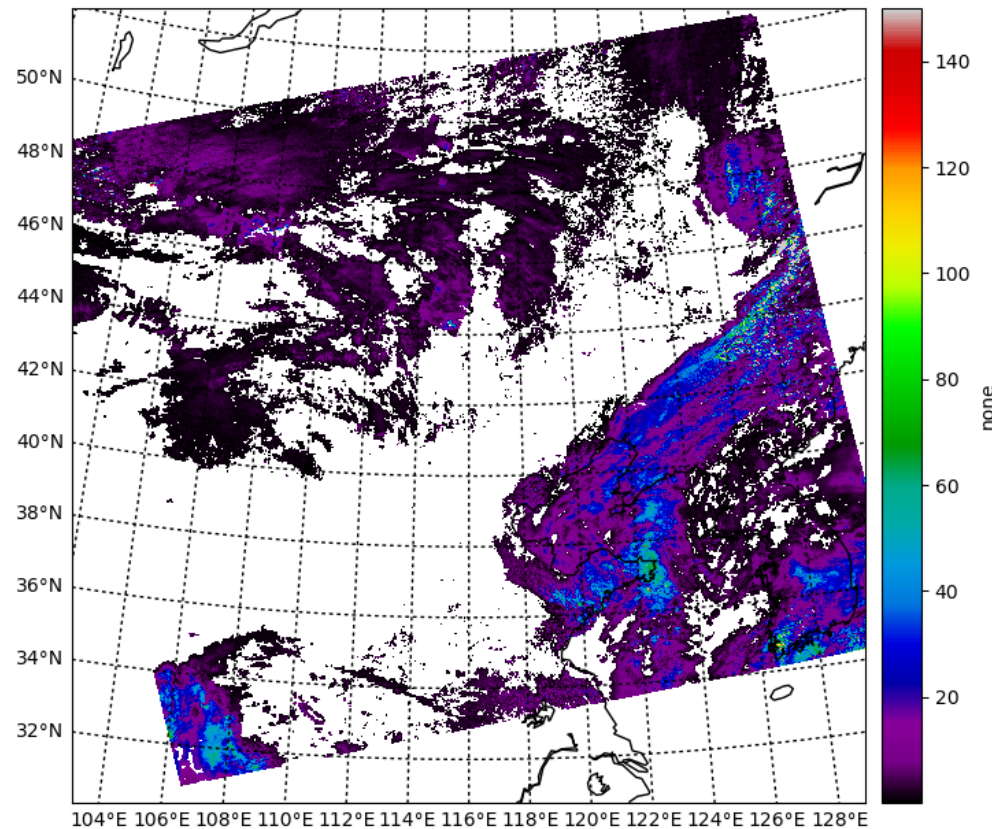


1315 LST

AQUA/MODIS Cloud Optical Thickness
7 March 2020 0515 UTC



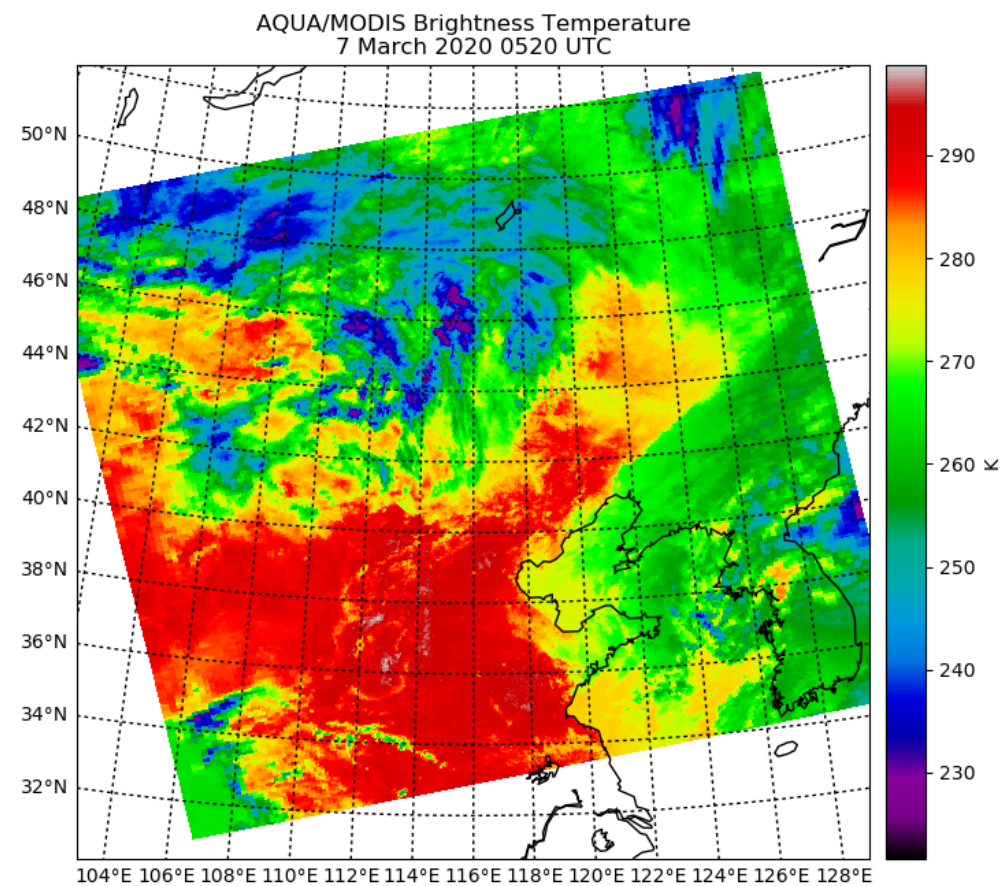
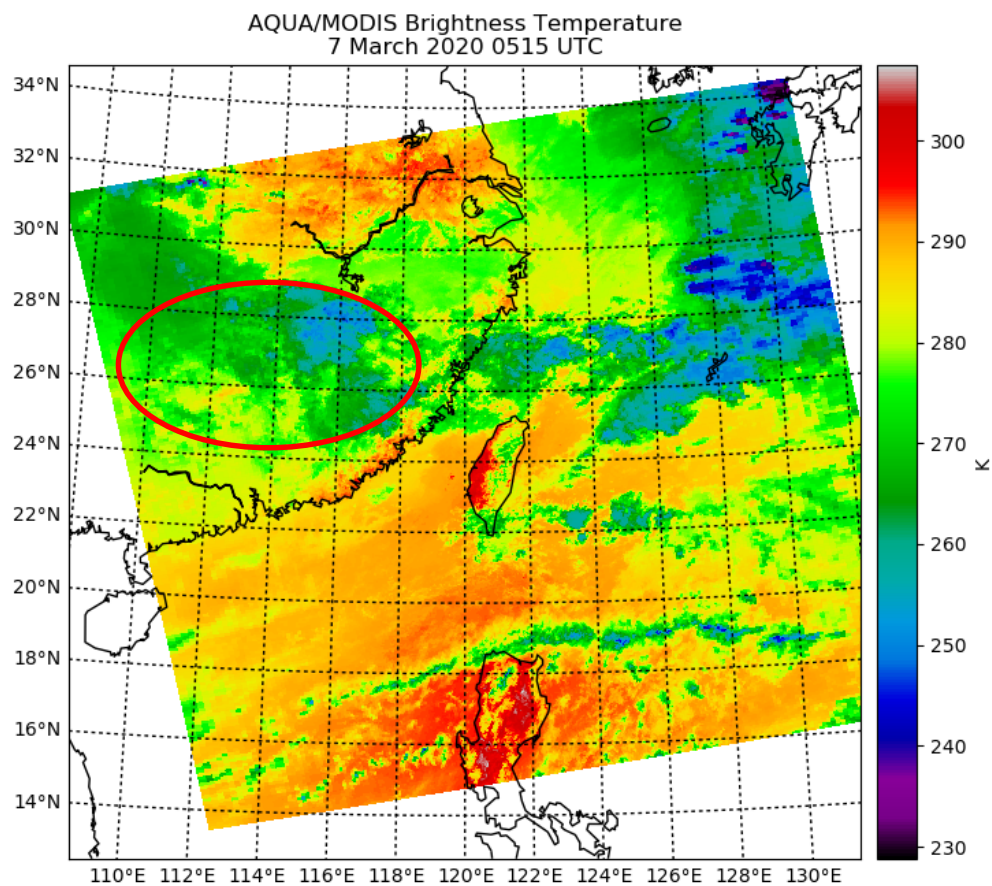
AQUA/MODIS Cloud Optical Thickness
7 March 2020 0520 UTC



Early March Cloud Properties – AQUA/MODIS

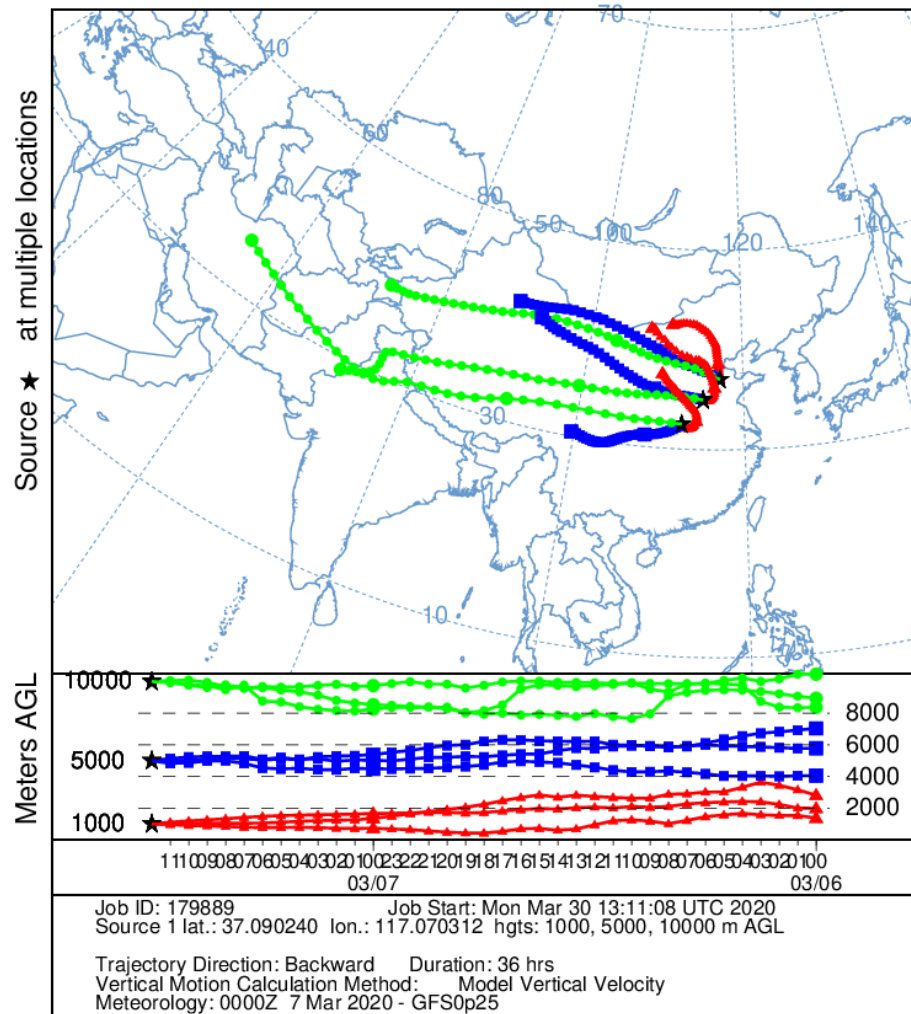


1315 LST

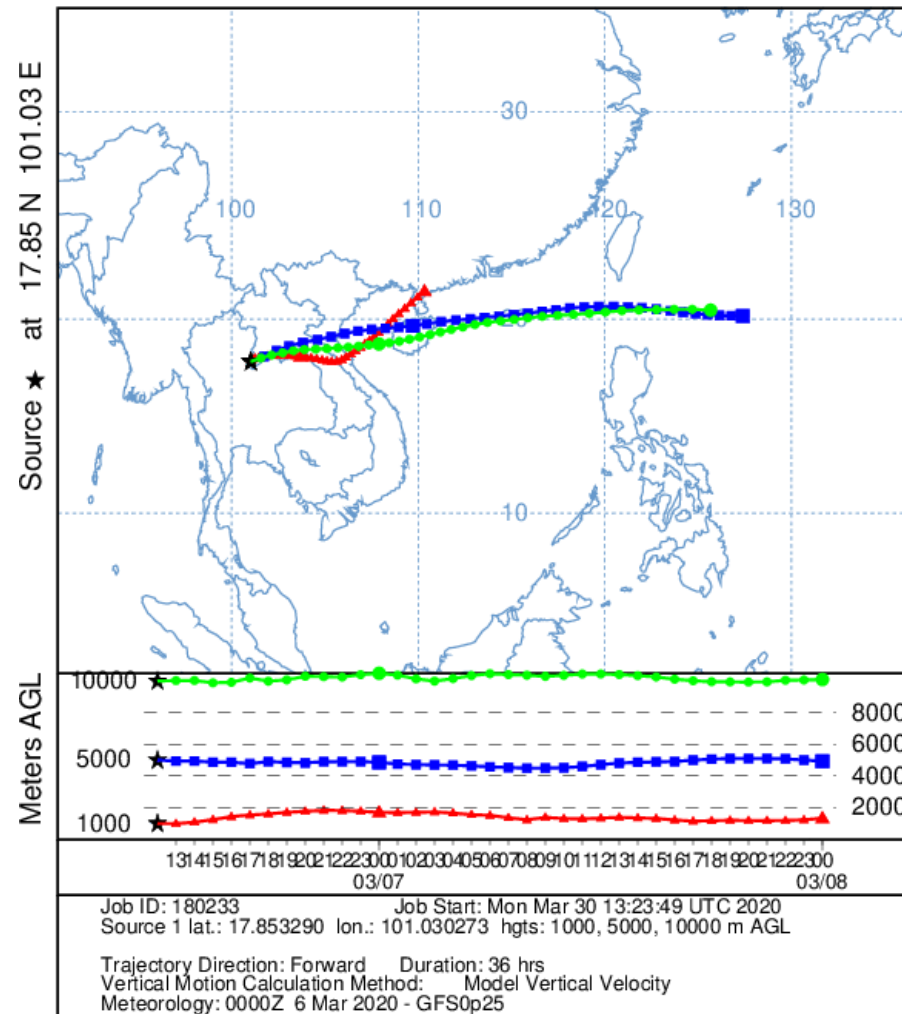


Trajectory Comparison

NOAA HYSPLIT MODEL
Backward trajectories ending at 1200 UTC 07 Mar 20
GFSQ Meteorological Data



NOAA HYSPLIT MODEL
Forward trajectories starting at 1200 UTC 06 Mar 20
GFSQ Meteorological Data



- In general, over central China on 7 March 2020, large cloud optical thickness values correspond to small cloud effective radius values and cold cloud top temperatures.
- Small cloud effective radius values ($< 30 \mu\text{m}$) associated with large cloud optical thickness values for a particular cloud system signifies a polluted cloud with a large concentration of small cloud particles.
- In addition, this condition is associated with thicker clouds that are taller (colder cloud tops) and have longer lifetimes (more persistent), and possibly indicate the occurrence of the aerosol indirect effect of “cloud microphysical invigoration”.