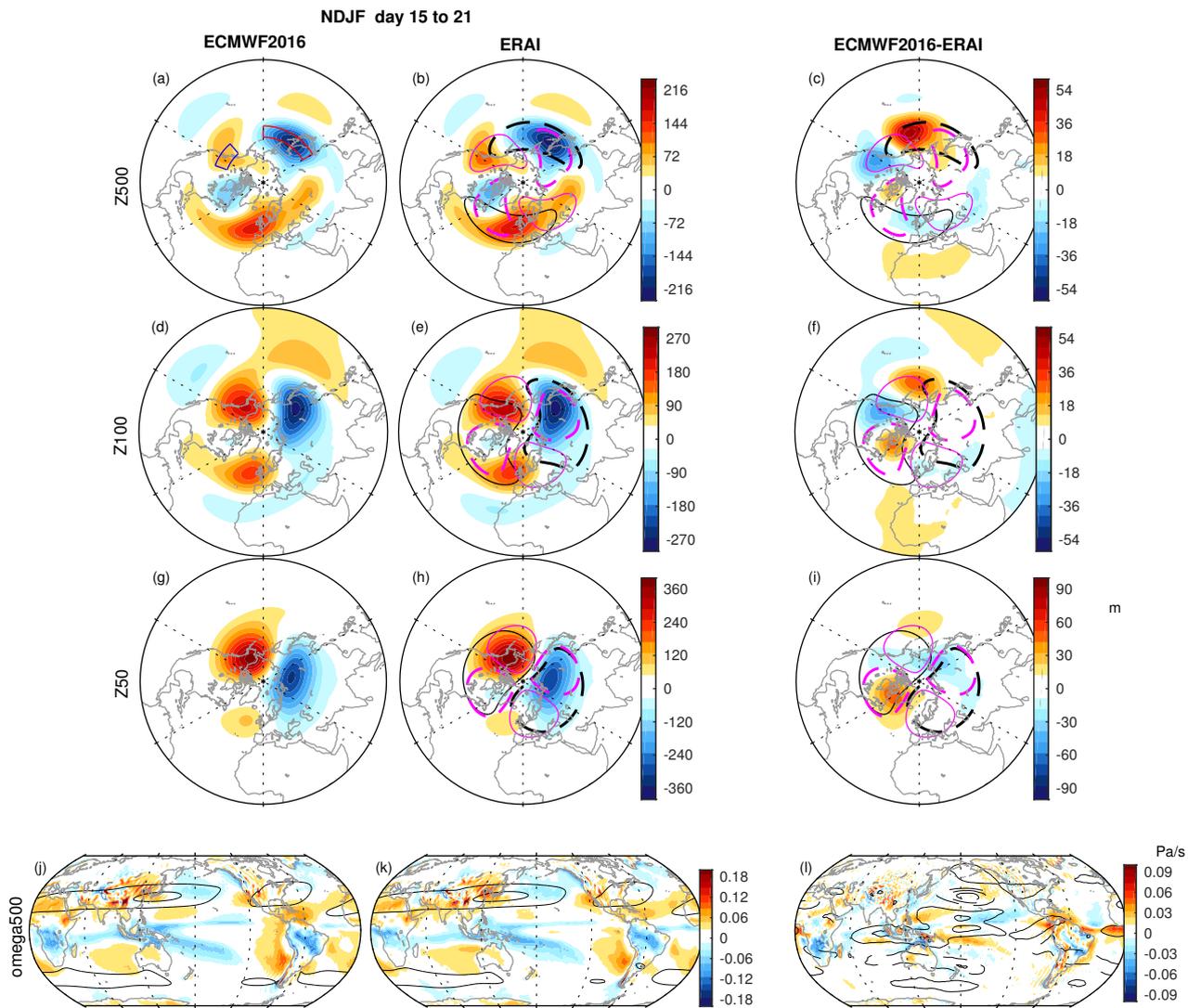
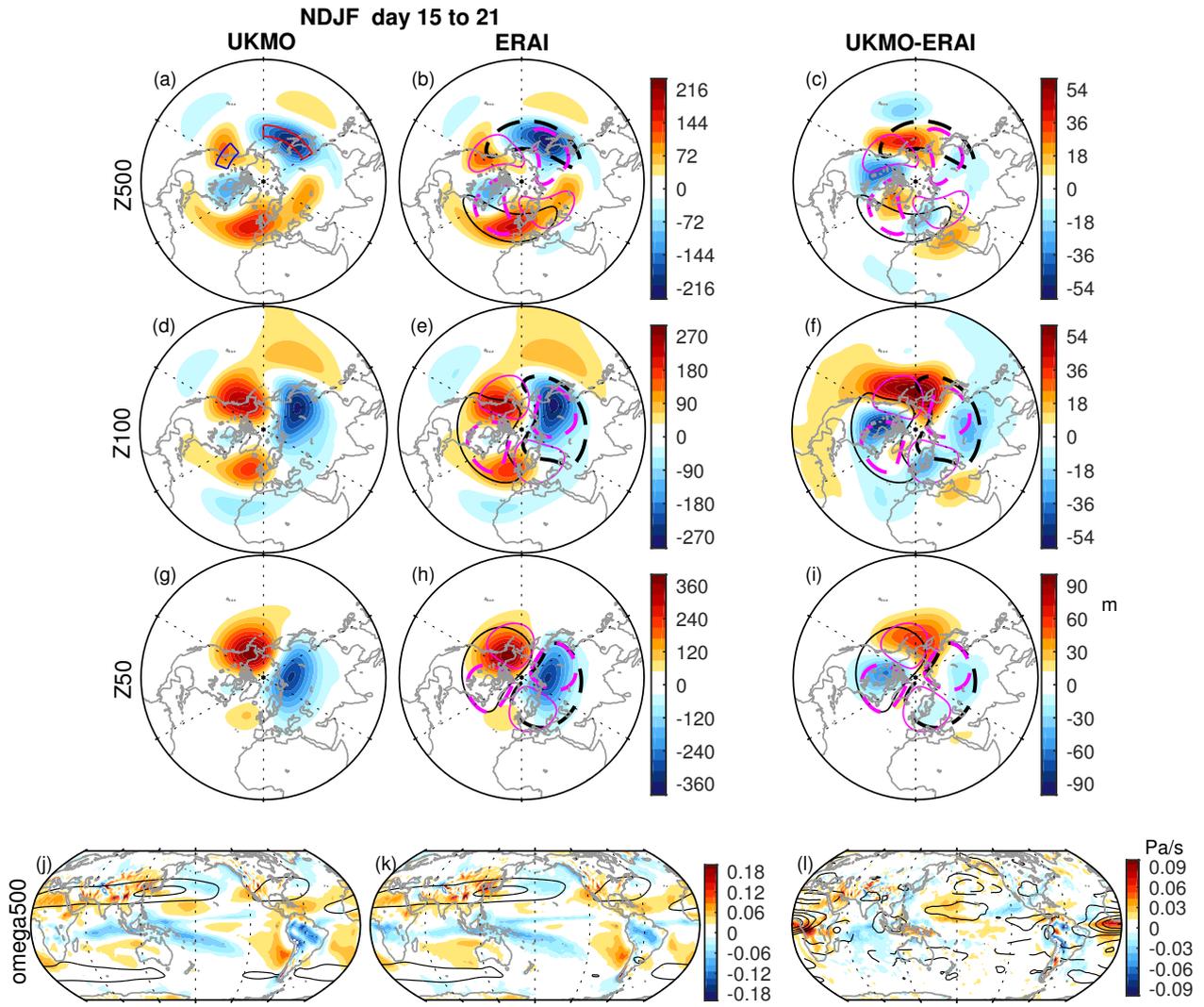


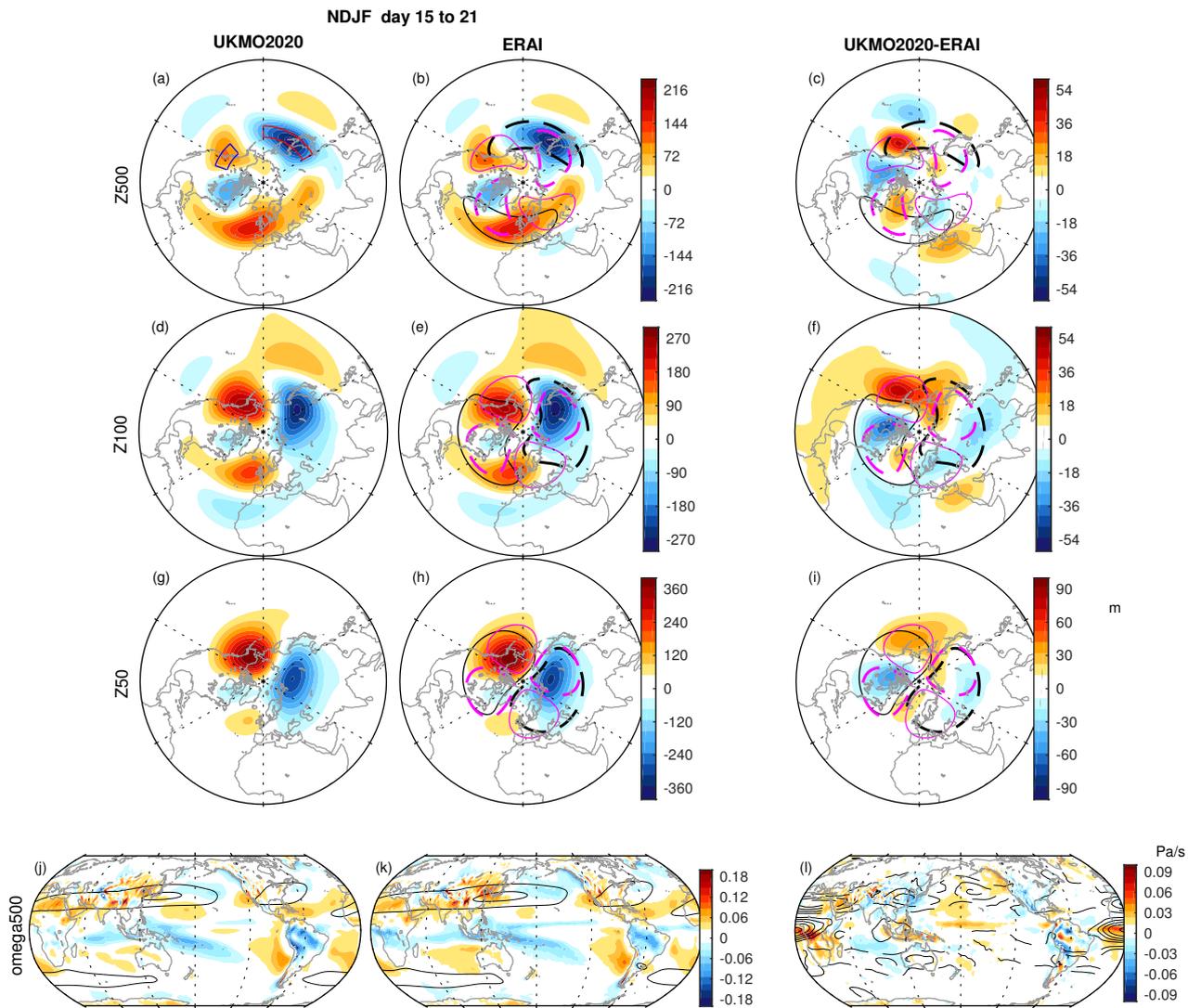
**Figure S1.** Top: anomalies from zonal mean of geopotential height (m) during week 3 for initializations during NDJF in the ECMWF-2020 model at (a) 500 hPa (d) 100 hPa; (g) 50 hPa; the middle column (b,e,h) is for ERA-I to subsampled to match the dates chosen for ECMWF-2020; the right column (c,f,i) is for the difference between ERA-I and ECMWF-2020; black and magenta contours denote the stationary wavenumber-1 and wavenumber-2 components in ERA-I; Bottom: pressure velocity (color) and zonal wind (contours) during week 3 for initializations during NDJF: (j) in the ECMWF-2020 model; (k) for ERA-I to subsampled to match the dates chosen for ECMWF-2020; (l) the difference between ERA-I and ECMWF-2020.



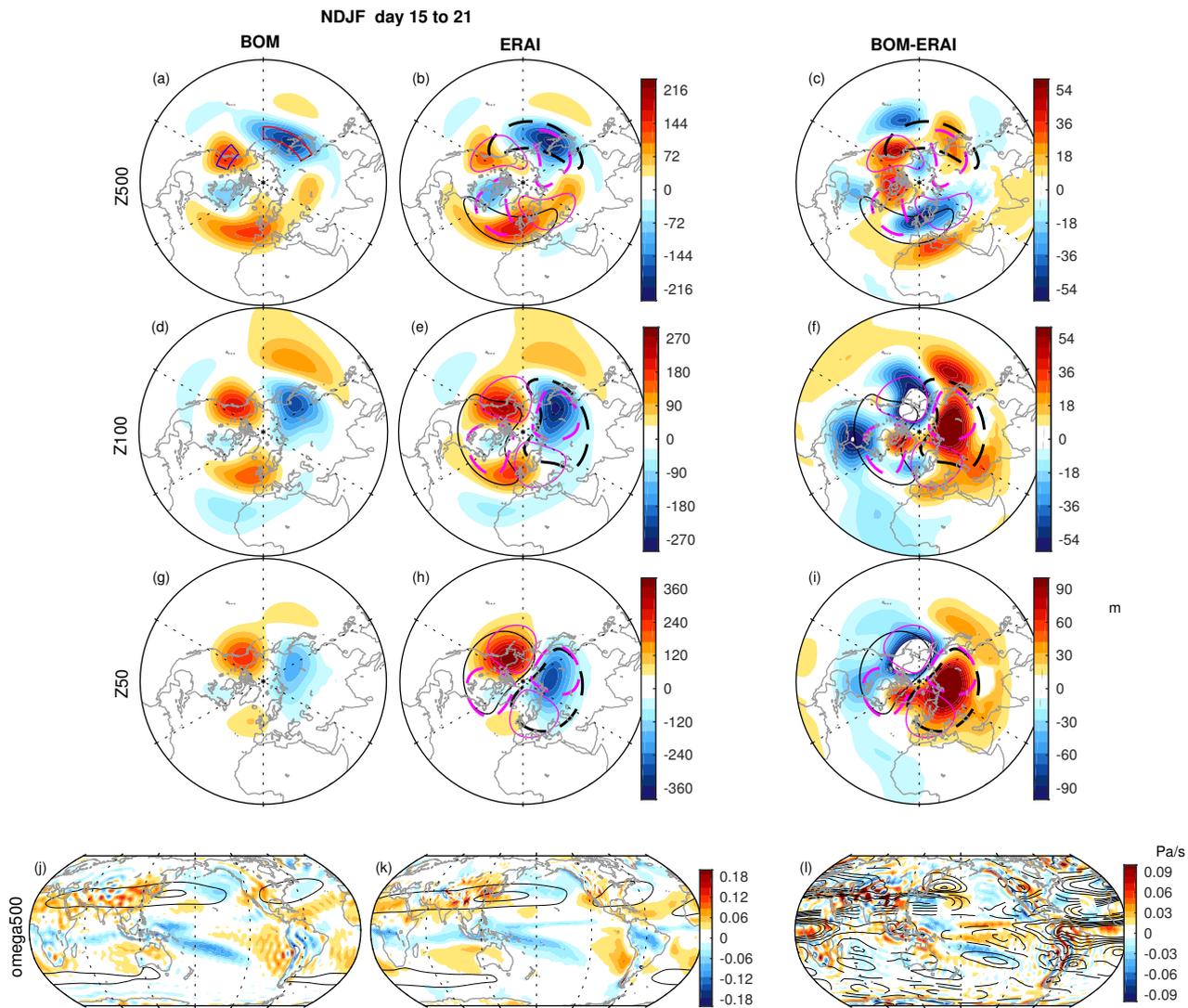
**Figure S2.** Same as figure the ECMWF-2016 model.



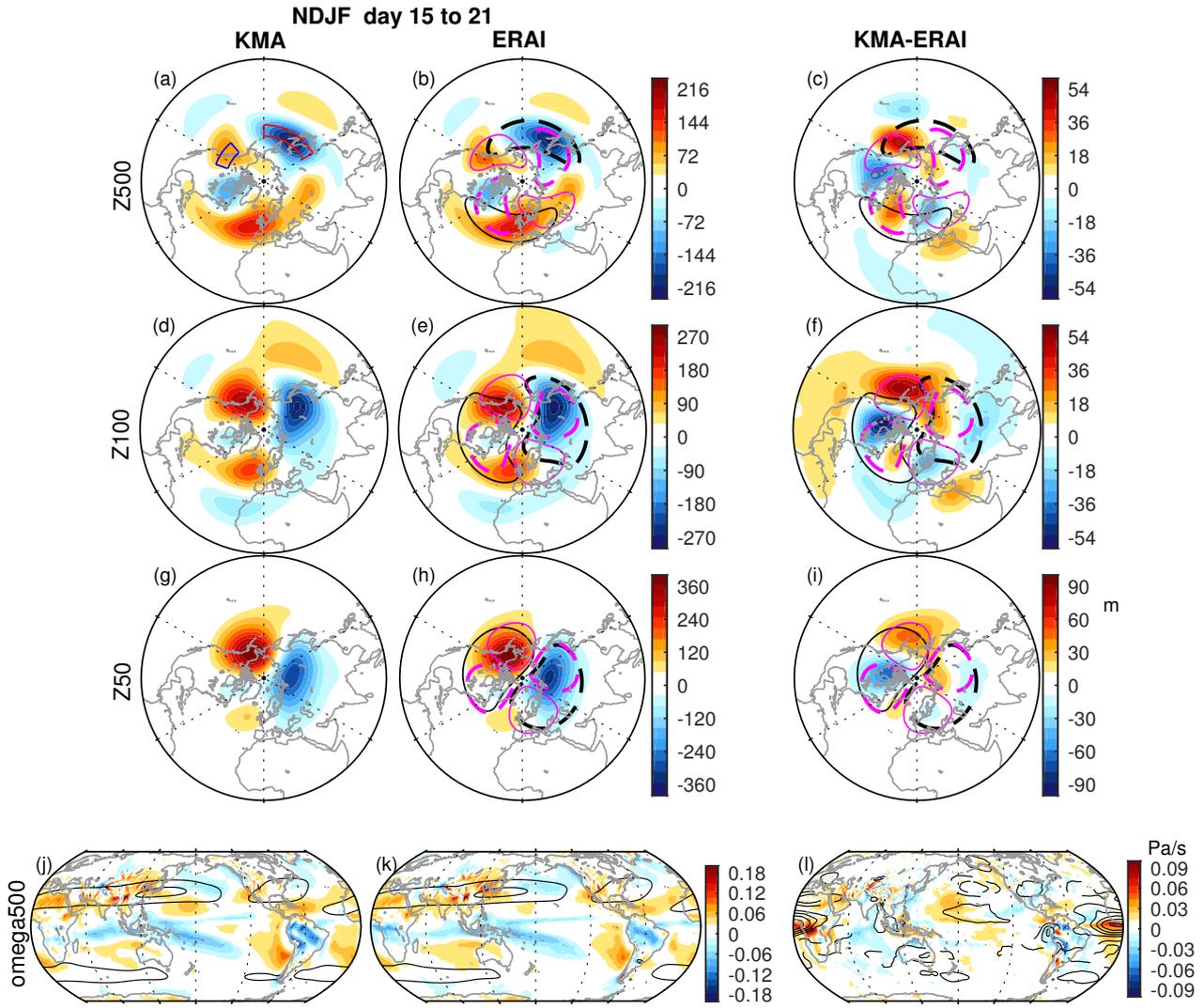
**Figure S3.** Same as figure S1 but the UKMO-2016 model.



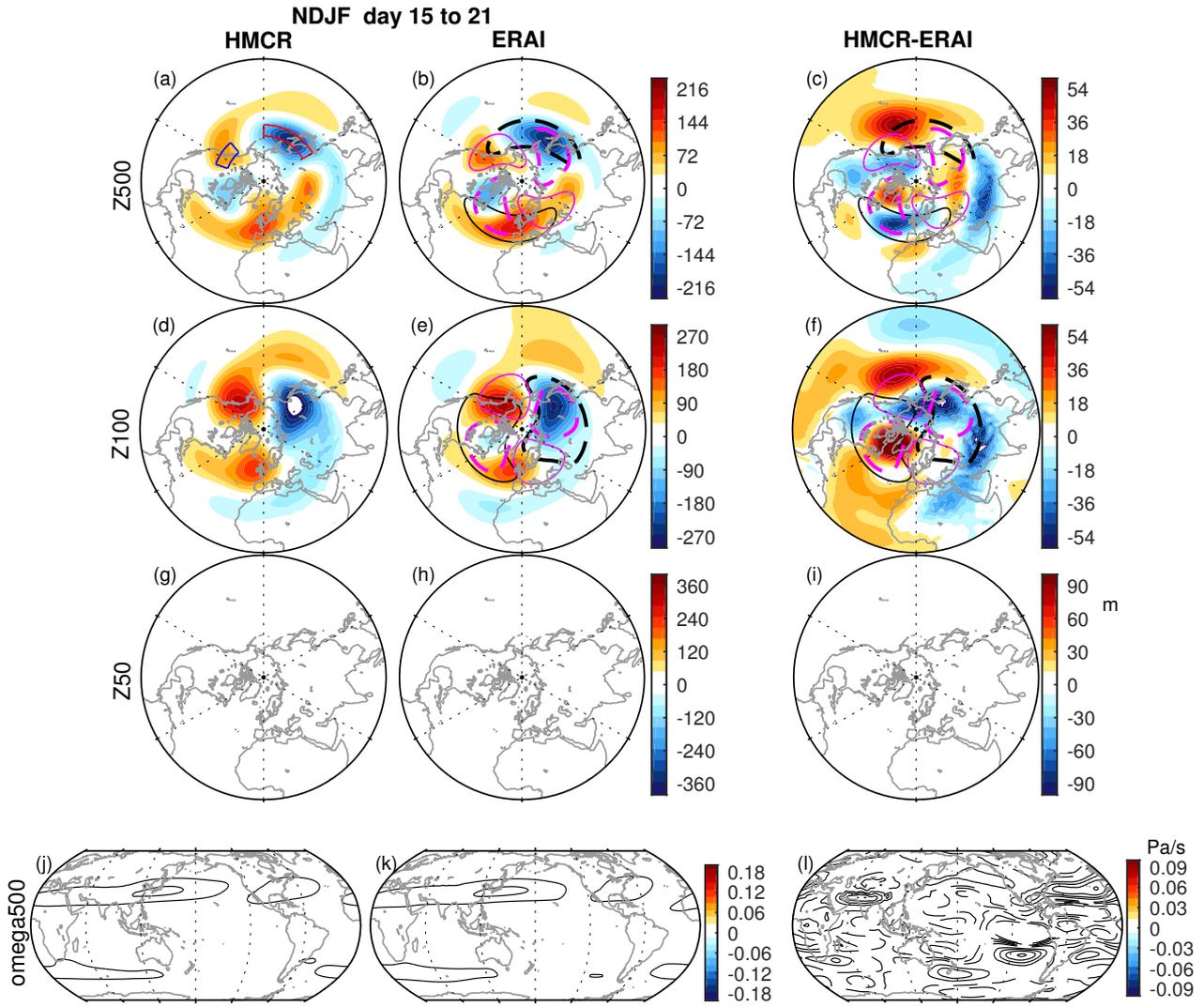
**Figure S4.** Same as figure S1 but for the UKMO-2020 model.



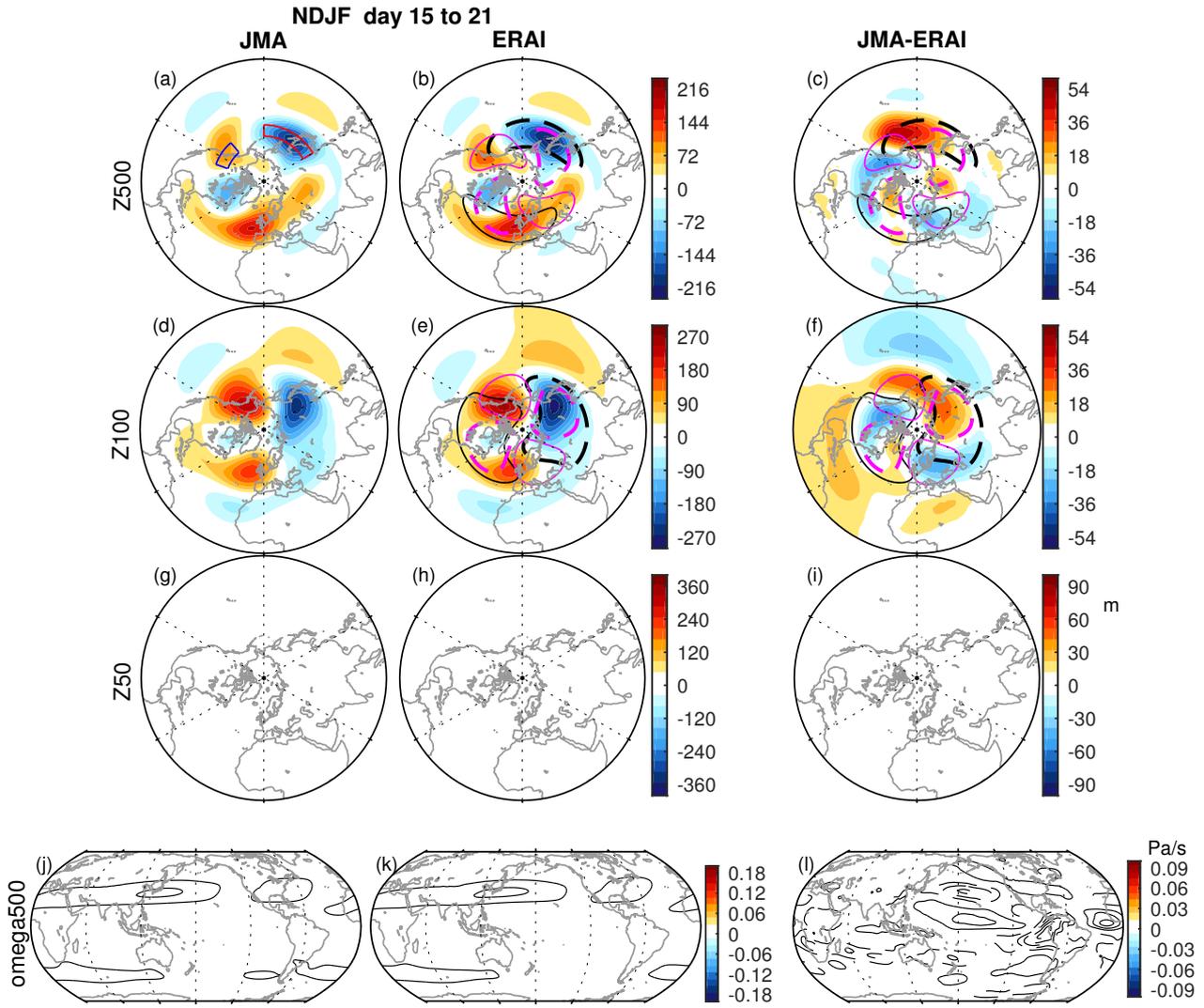
**Figure S5.** Same as figure S1 but for the BoM model.



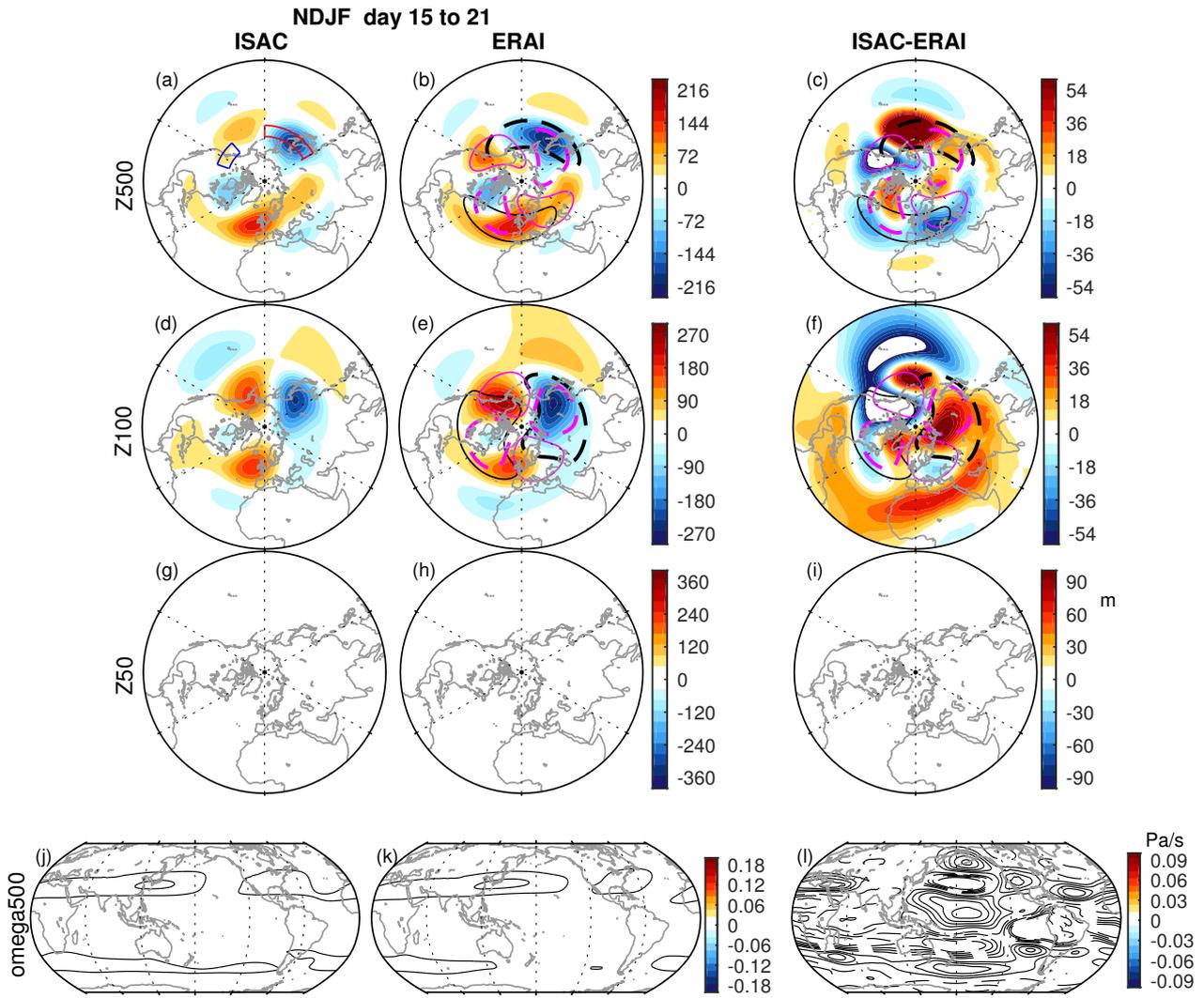
**Figure S6.** Same as figure S1 but for the KMA model.



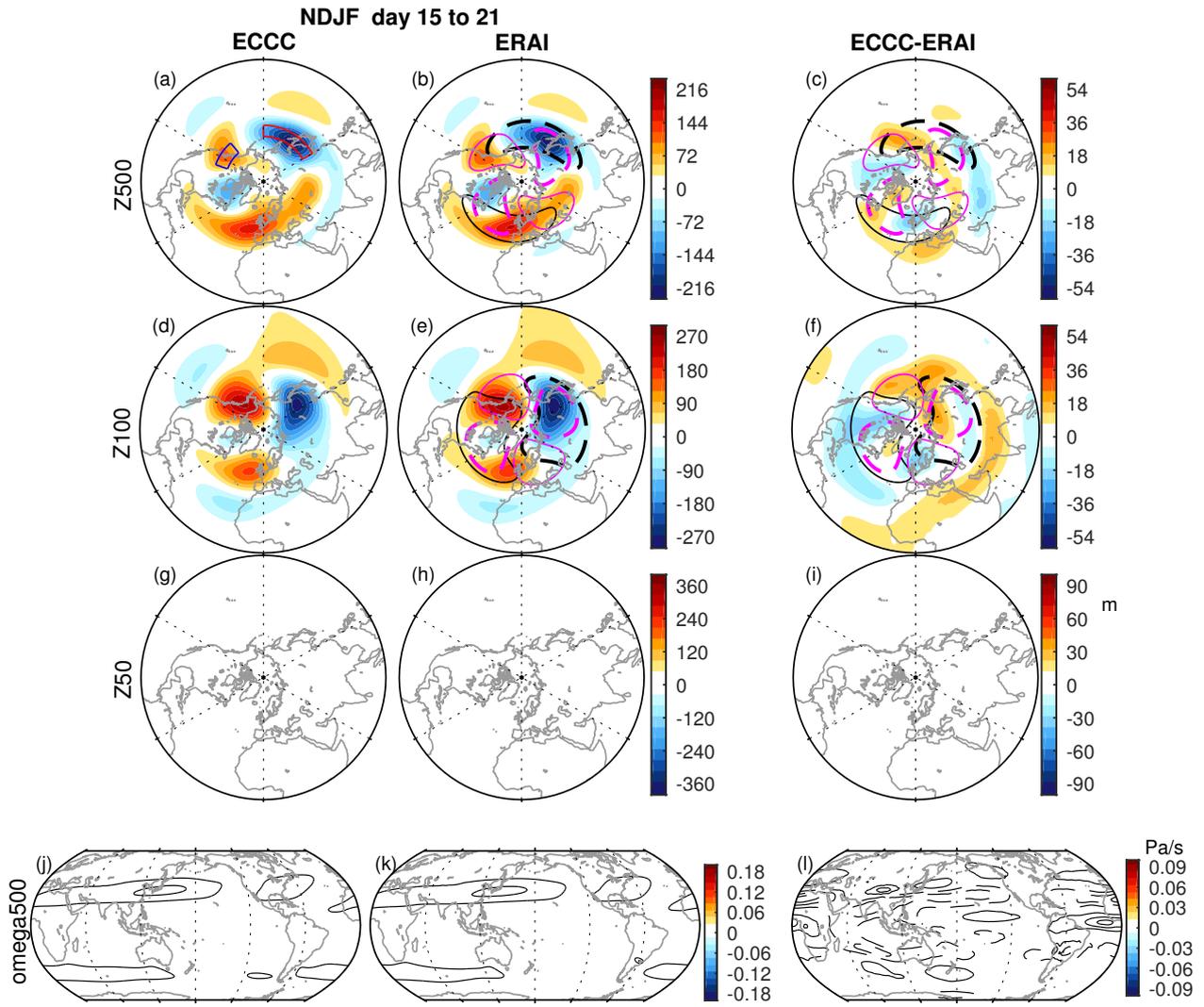
**Figure S7.** Same as figure S1 but for the HMCRCR model.



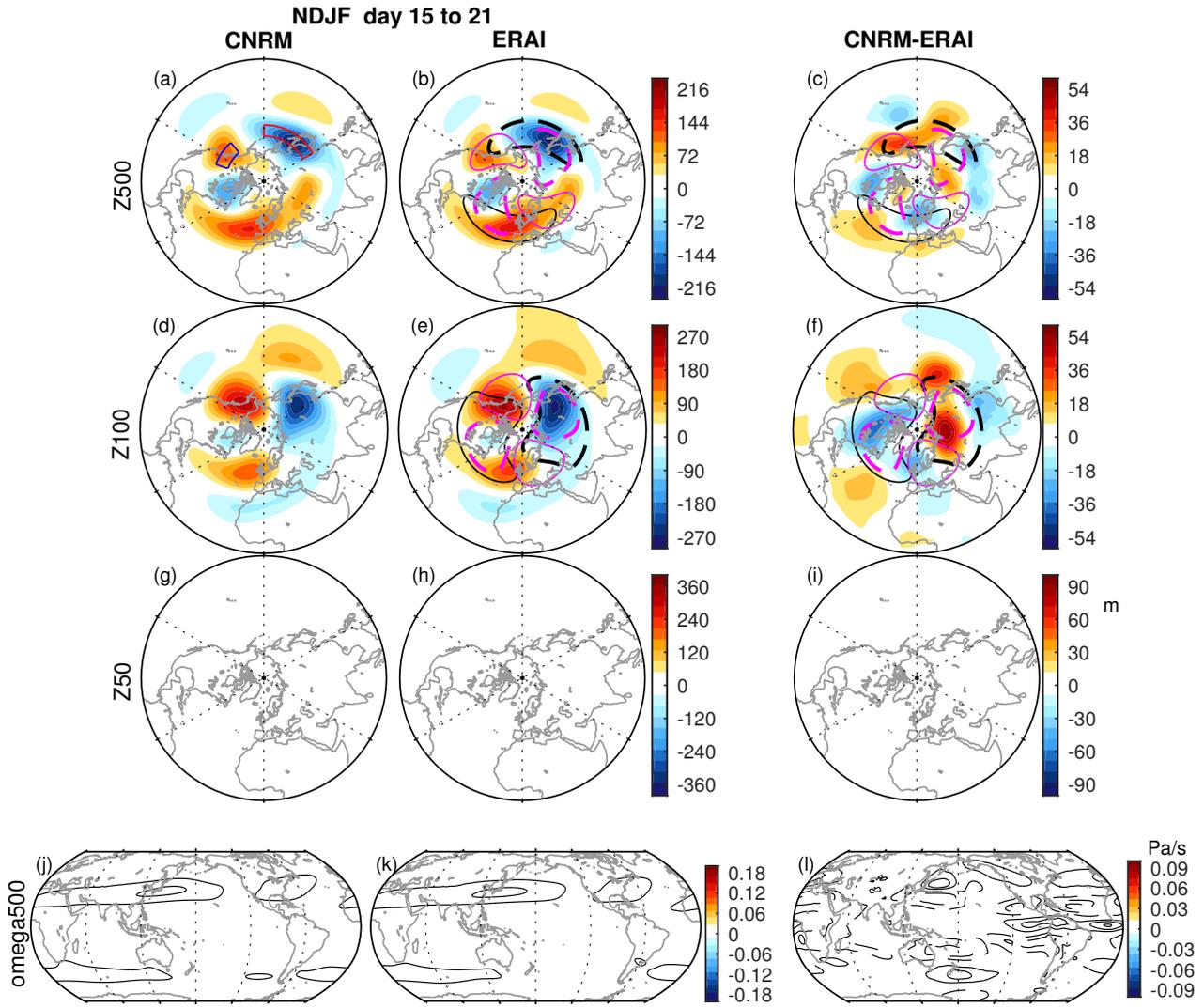
**Figure S8.** Same as figure S1 but for the JMA model.



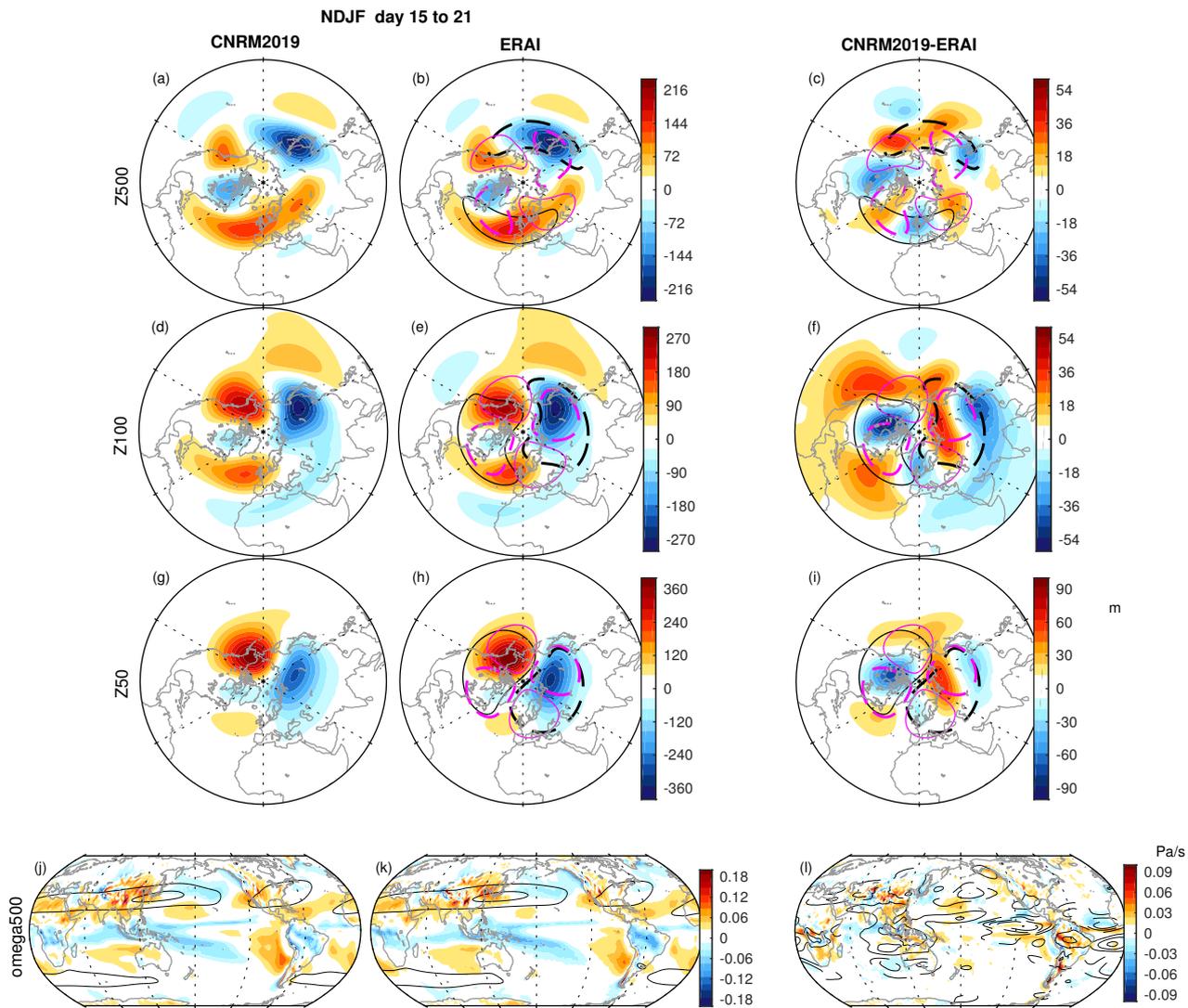
**Figure S9.** Same as figure S1 but for the ISAC model.



**Figure S10.** Same as figure S1 but for the ECCC model.



**Figure S11.** Same as figure S1 but for the CNRM-2014 model.



**Figure S12.** Same as figure 4 but for the CNRM-2019 model.