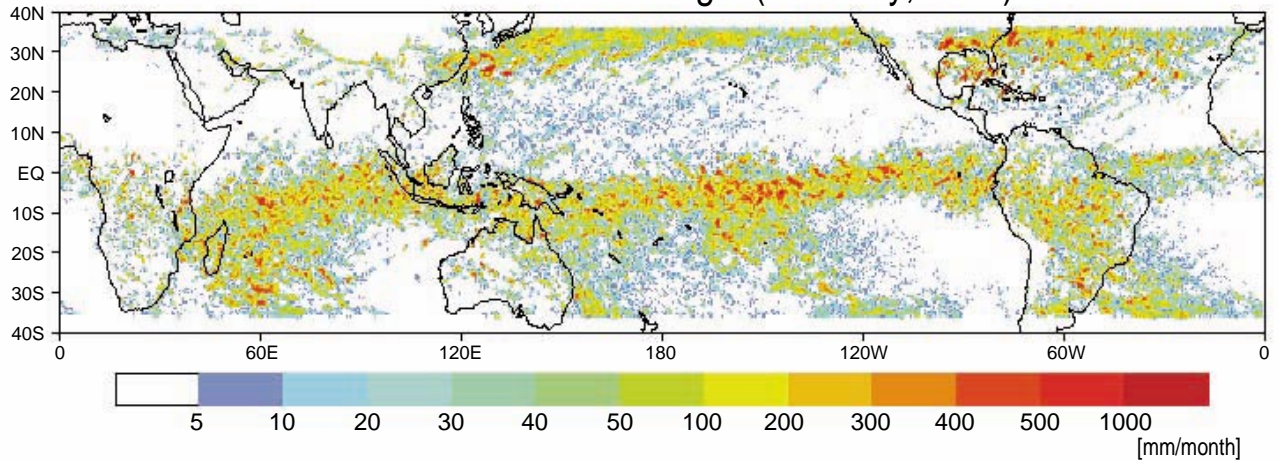


El Niño warm episode observed by TRMM

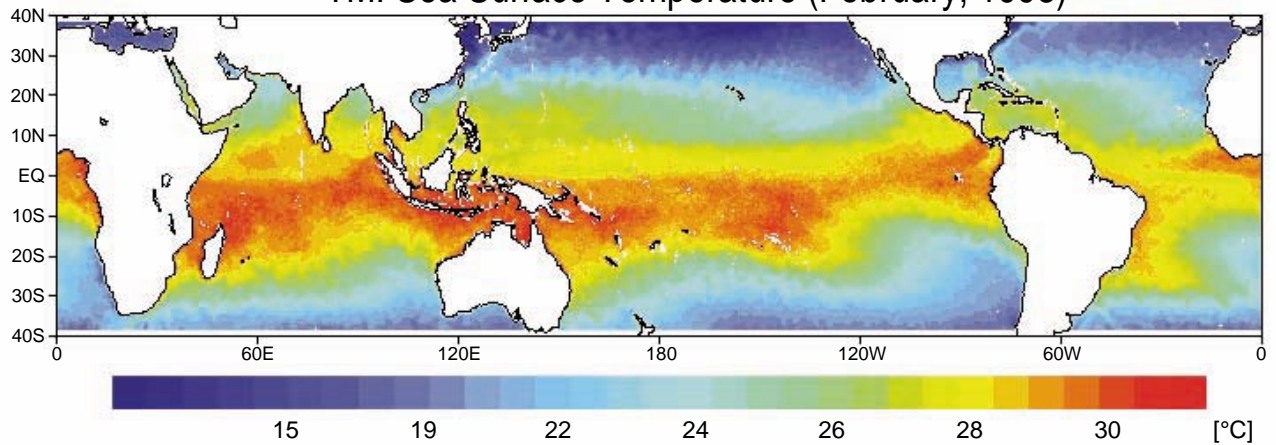


TRMM Earth View

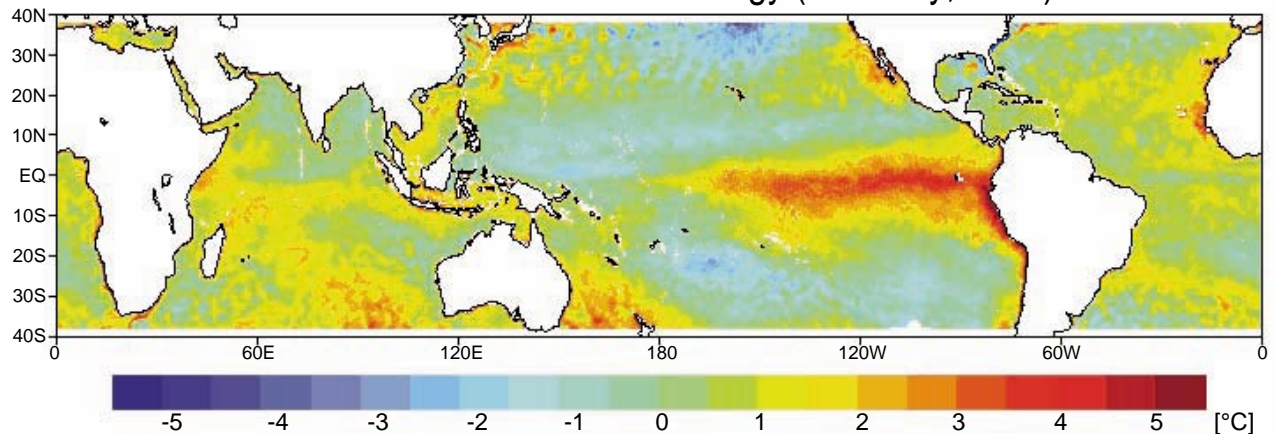
PR Rain at 2 km height (February, 1998)



TMI Sea Surface Temperature (February, 1998)



TMI SST — JMA climatology (February, 1998)



El Niño warm episode observed by TRMM

These figures indicate the variation of Sea Surface Temperature (SST) related to an El Niño warm episode and corresponding rainfall distribution in February 1998.

The upper panel shows estimated accumulated monthly rainfall at 2.0 km height derived from the Precipitation Radar (PR). Heavy rainfall regions were observed in the Southern Hemisphere which was in the summer season in this figure. Zonal heavy rainfall regions along the equator correspond to the Intertropical Convergence Zone (ITCZ). In a normal year, heavy rainfall regions are located around the western tropical Pacific, but in February 1998, the maximum rainfall region over the equatorial Pacific moved east of date line, around 150°W at the equator. The El Niño warm episode is supposed to have influenced this shift. Also, there were no rain observations in the Tibetan Plateau, the Rocky Mountains and the Andes because those regions are highlands where the altitude exceeds 2.0 km.

The middle panel shows that monthly mean SST retrieved from the TRMM Microwave Imager (TMI) and its deviation from the climatological monthly mean compiled by the Japan Meteorological Agency. Yellow and red areas indicate higher SST than normal years. In the middle panel, higher SST regions in the tropics correspond well to heavy rainfall regions in the upper panel. Since the El Niño warm episode continued in February 1998, there are higher than normal SSTs in the Eastern equatorial Pacific and lower than normal SSTs in the western tropical Pacific. Related to those positive and negative SST anomalies, the heavy rainfall region extending over the equatorial Pacific shown in the upper panel shifted its maximum area further eastward than in normal years and less rainfall was observed in the western tropical Pacific. Such a shift of the maximum rainfall region in the tropics linked to convective activity variations should significantly affect world weather.