Aurora Candidates from the Chronicles of Qing Dynasties for Decoding Past Solar Activities

*Akito Davis Kawamura¹, Hisashi Hayakawa², Haruhumi Tamazawa¹, Hiroaki Isobe³,⁴

¹.Kwasan Observatory, Kyoto University, ².Graduate School of Letters, Kyoto University, ³.The Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University, ⁴.Unit of Synergetic Studies for Space, Kyoto University, Japan

We present the survey result of observational records of auroras in chronicles of Qing dynasties, Qingshigao, the draft chronicle of Qing dynasty (1644-1912 CE). In total we found 111 records of aurora candidates associated with the keywords such as vapor (qi), cloud (yun), and light (guang). Among the 111 records we found, 14 records are considered as very likely to be low latitude auroras with corresponding records of simultaneous observation in the western world, and 6 records are newly found low latitude aurora candidates after moon phase analysis in order to eliminate a possibility of atmospheric optics involving. Some of our presenting candidates of low latitude aurora are dated during the Maunder minimum, and therefore we would suggest our presenting data potentially helpful for further discussion on past solar activities.

Keywords: Aurora, Space Weather, Historical Resources