

Long-Term Evolution of the Geospace Climate

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When I was a lad, a tiny wee lad
My mother said to me
Come see the Northern Lights my
boy

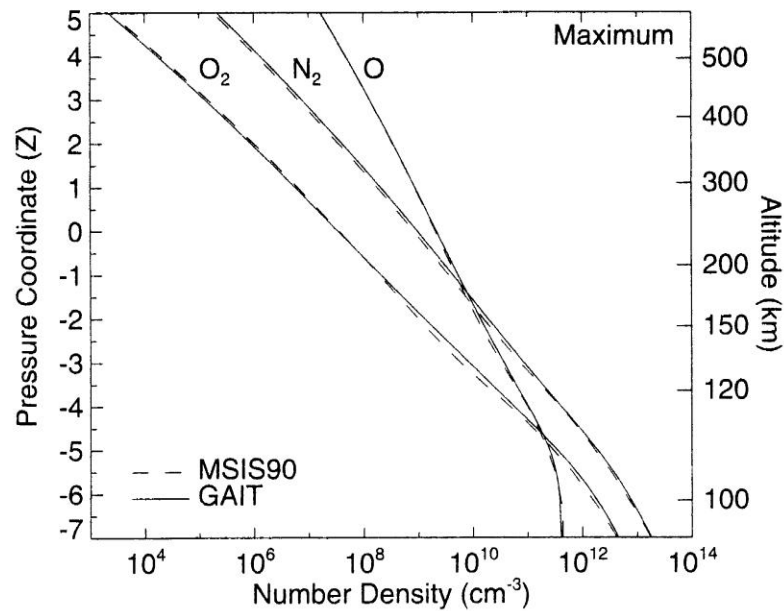
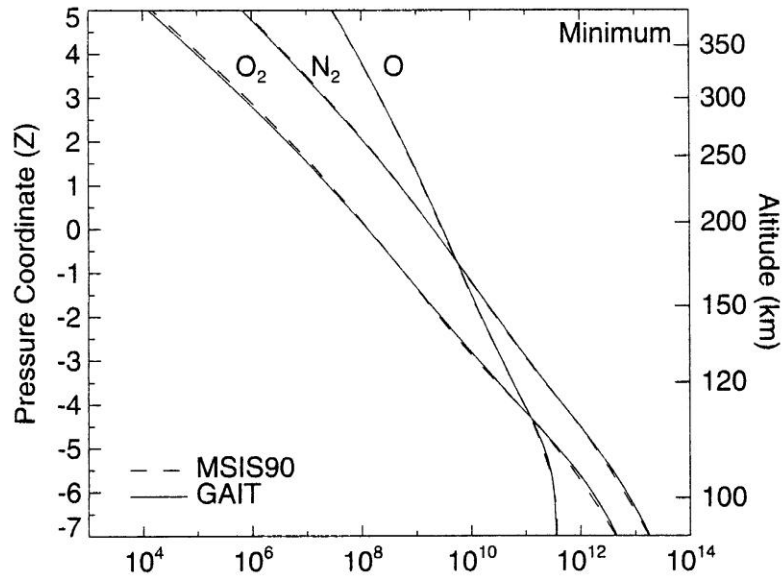
They're bright as they can be
She called them the heavenly dancers
Merry dancers in the sky
I'll never forget, that wonderful sight
They made the heavens bright

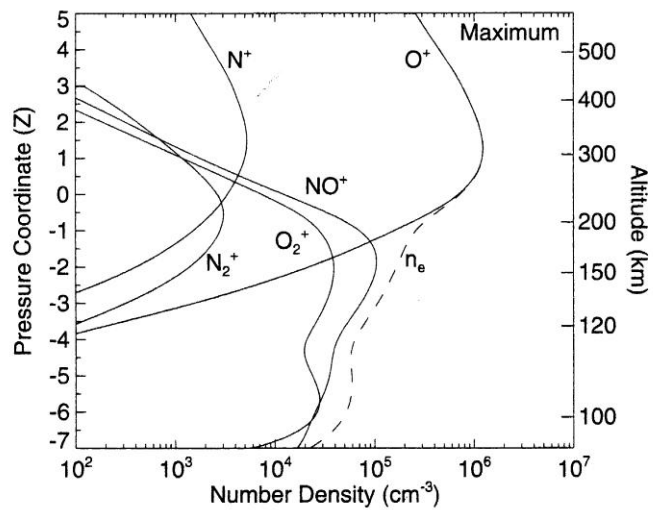
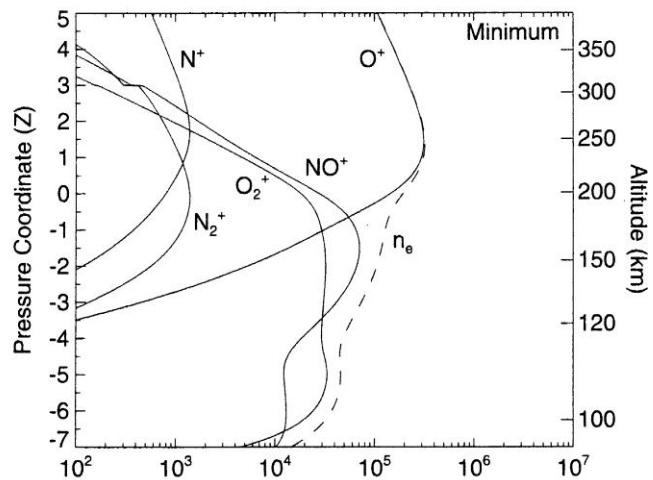


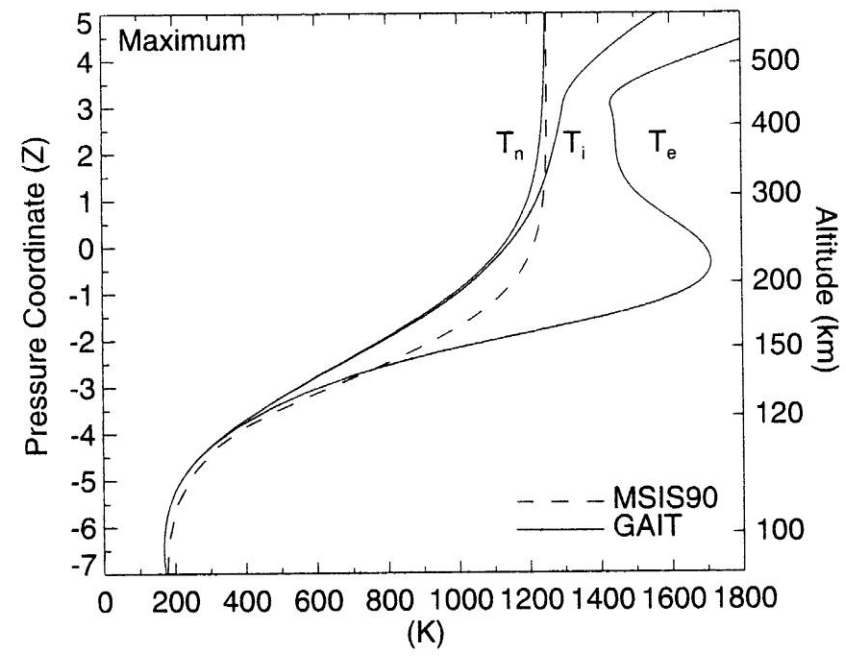
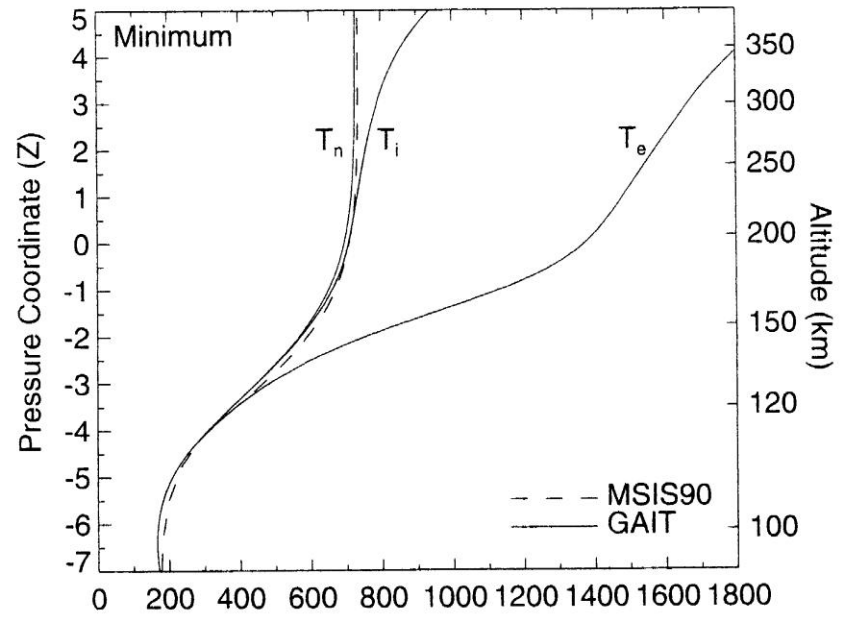


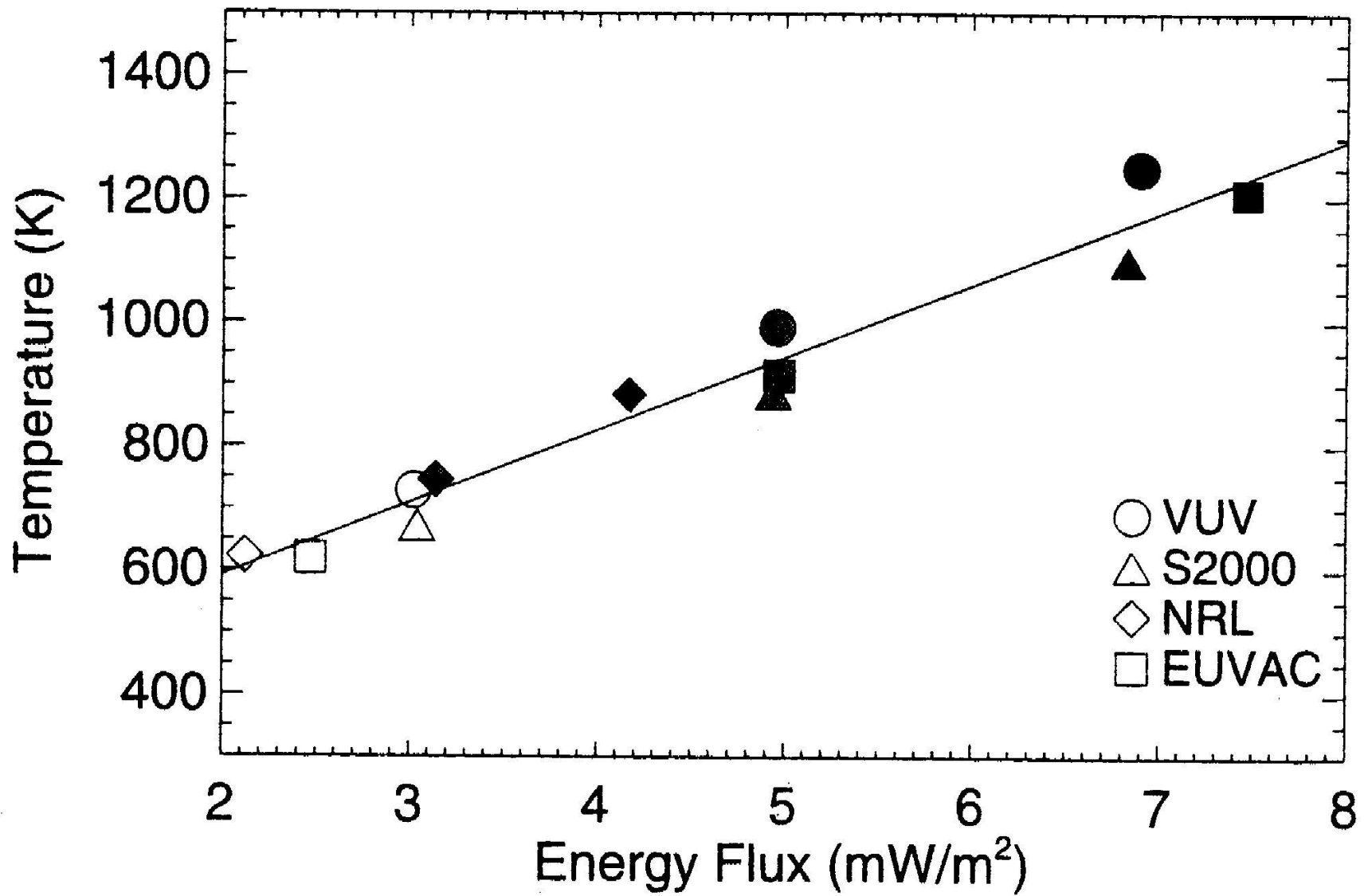


Solar Photon Radiation



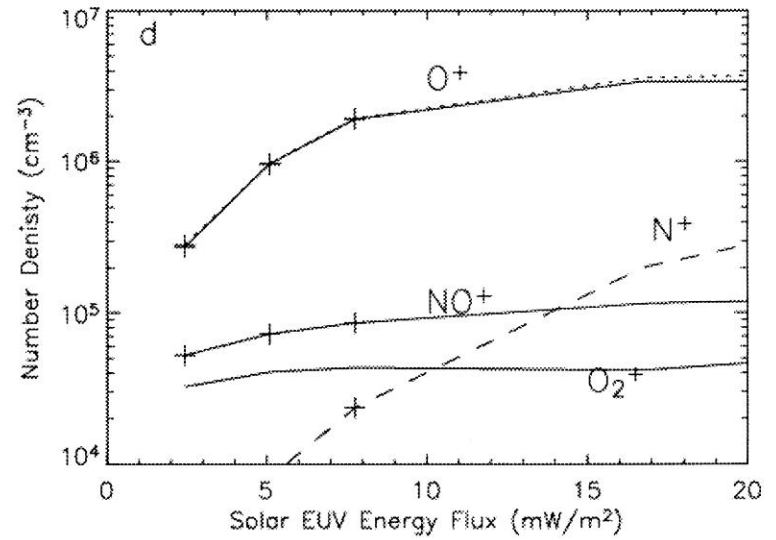
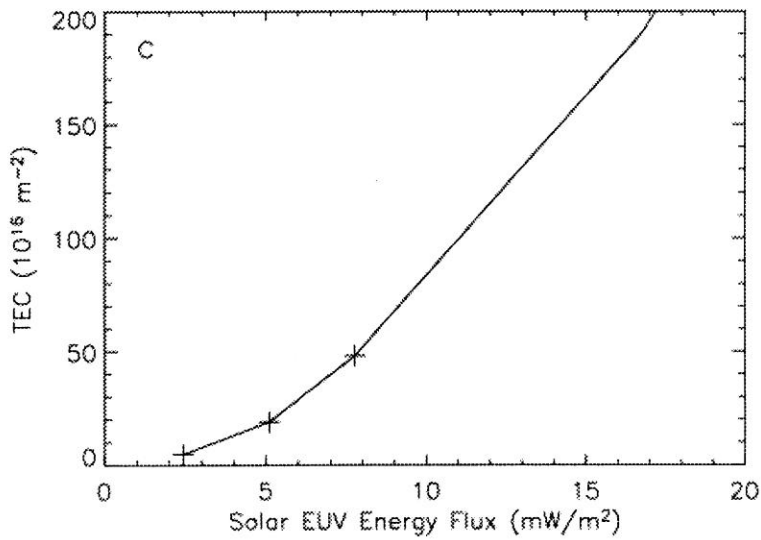
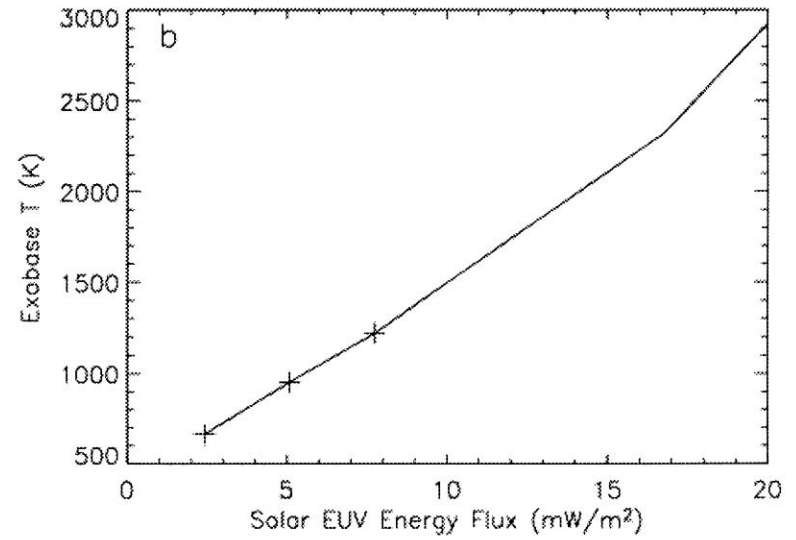
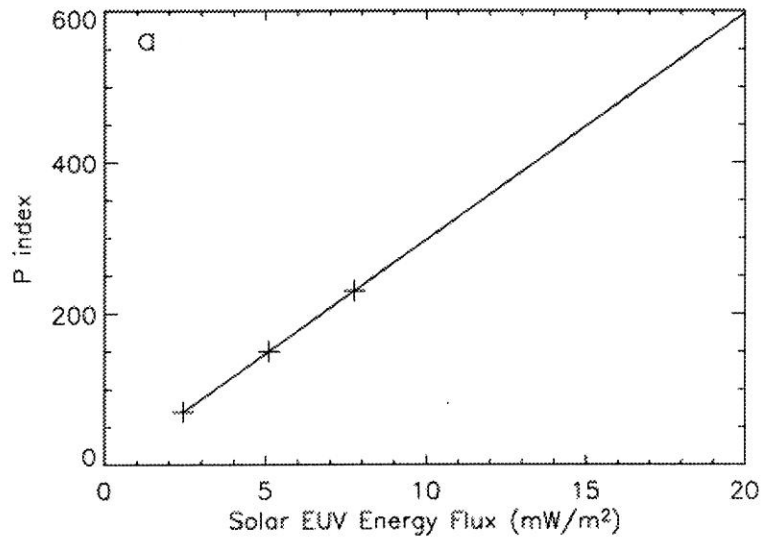






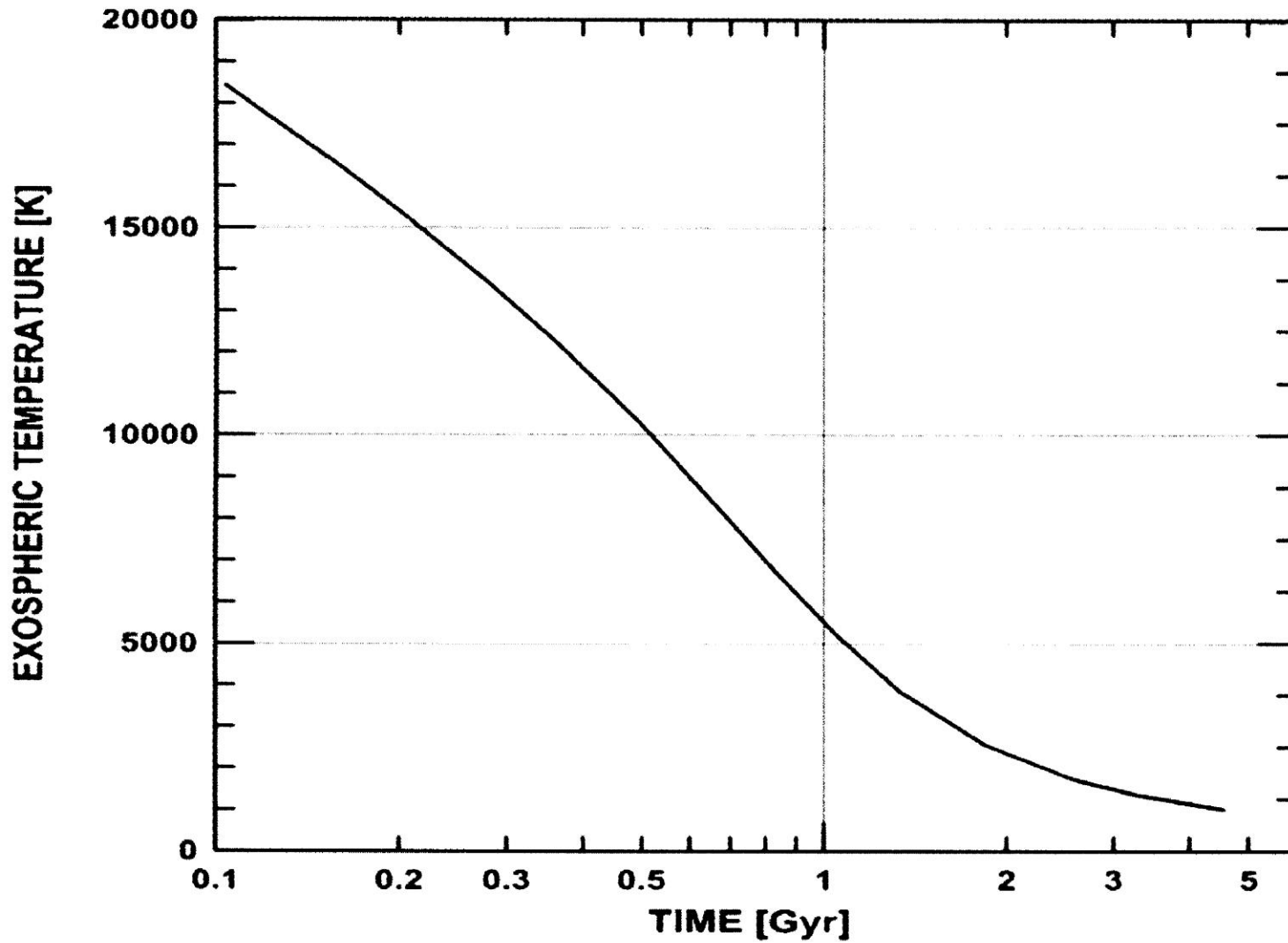
Maunder Minimum

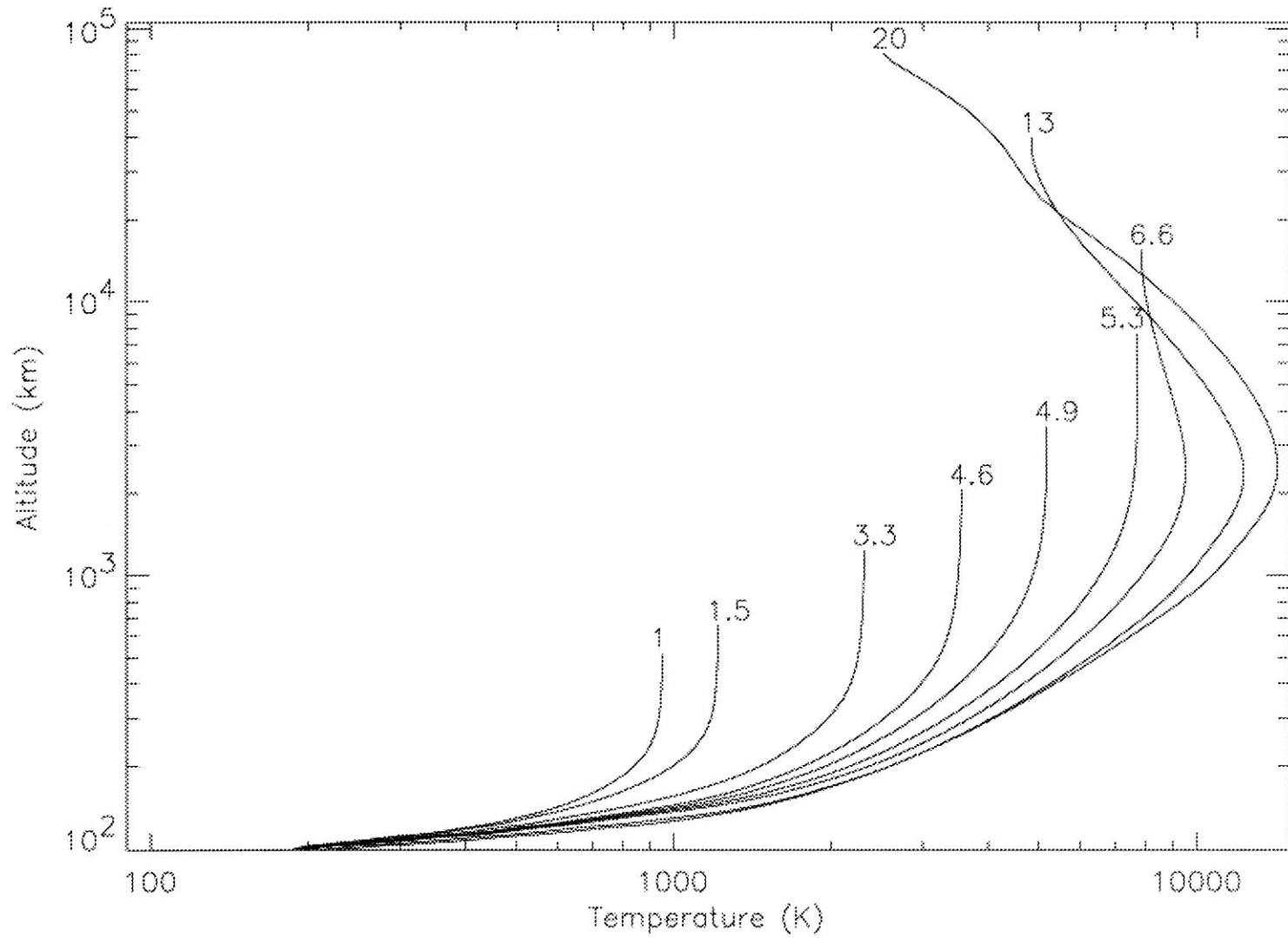
Extreme Maxima



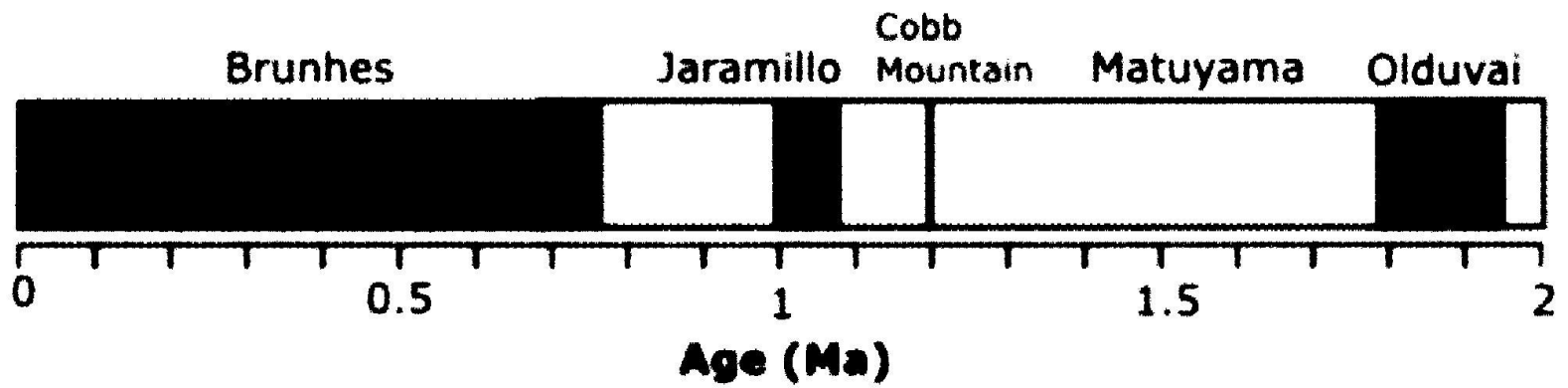


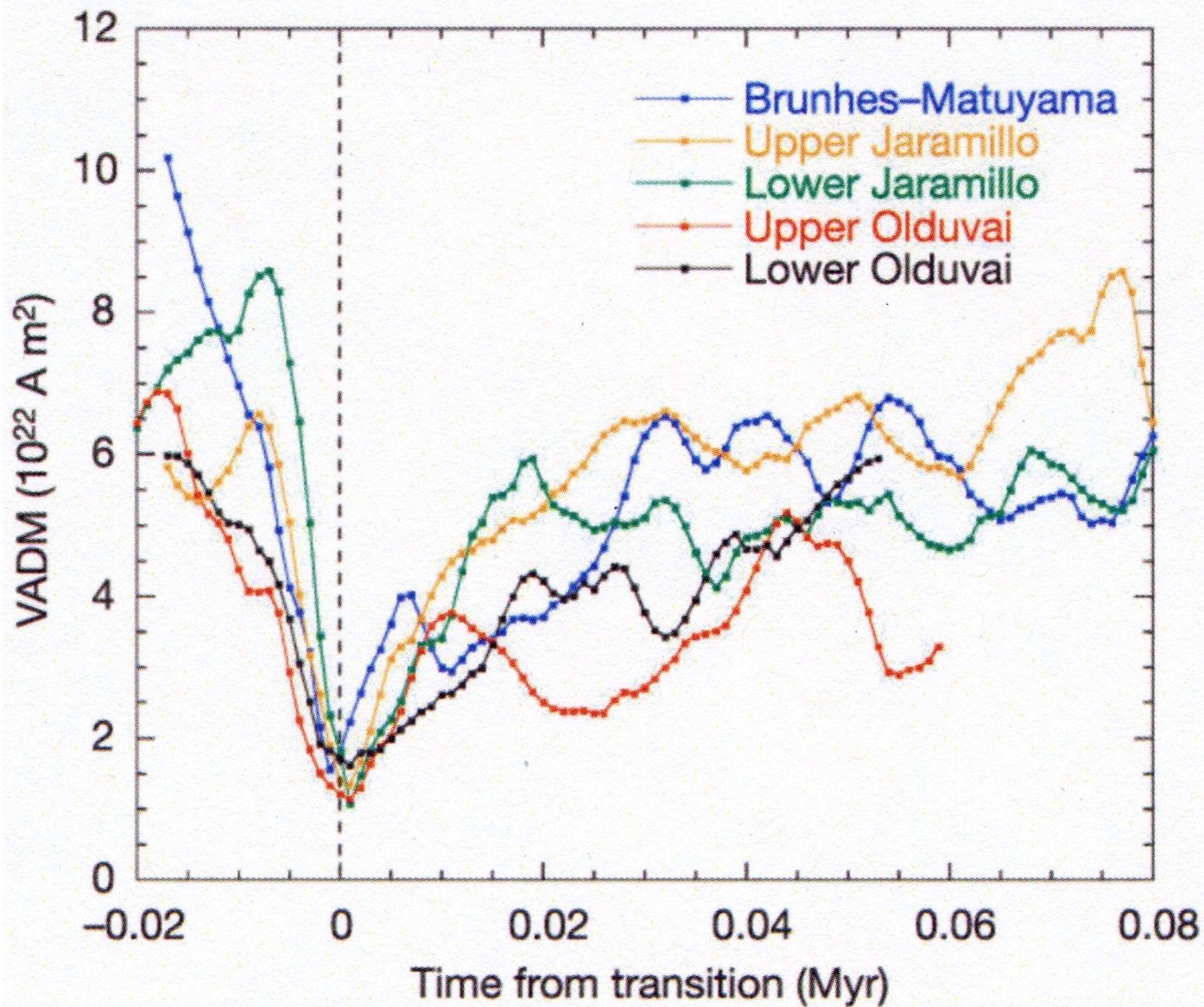
Billions of years ago!

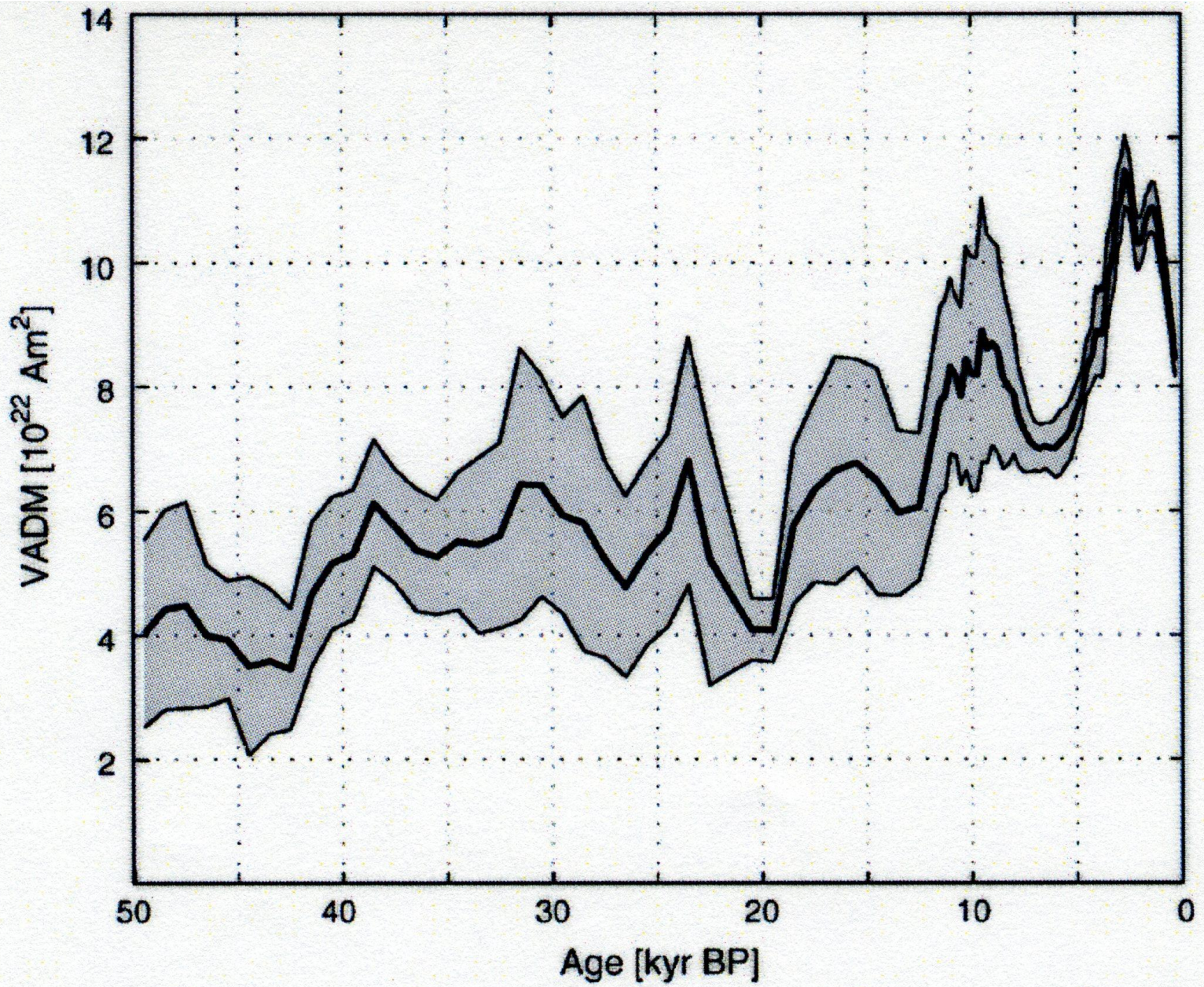




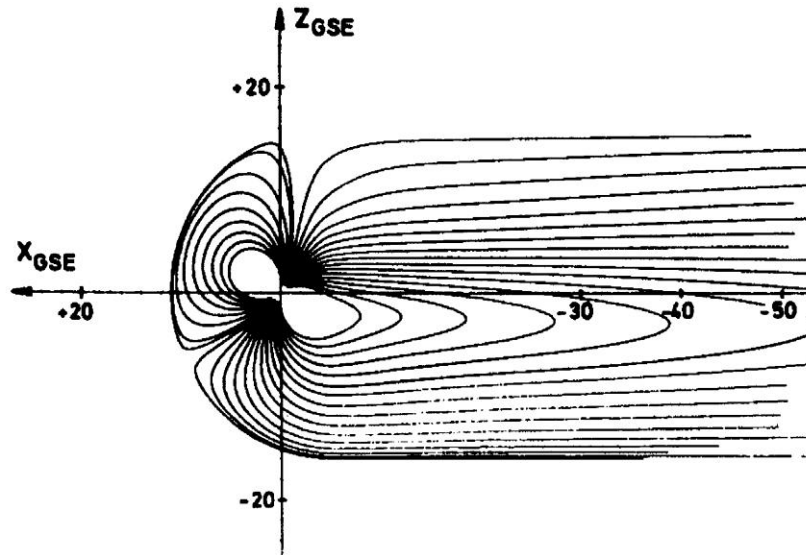
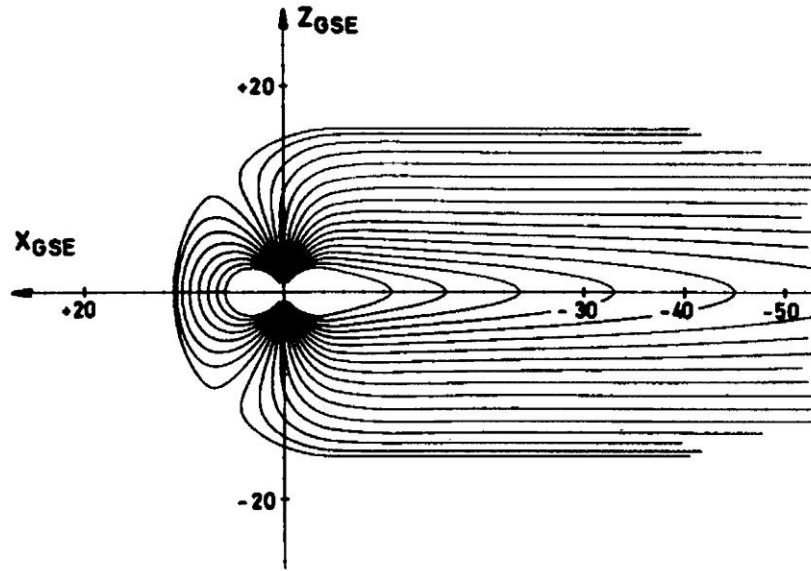
Dipole Field----flips



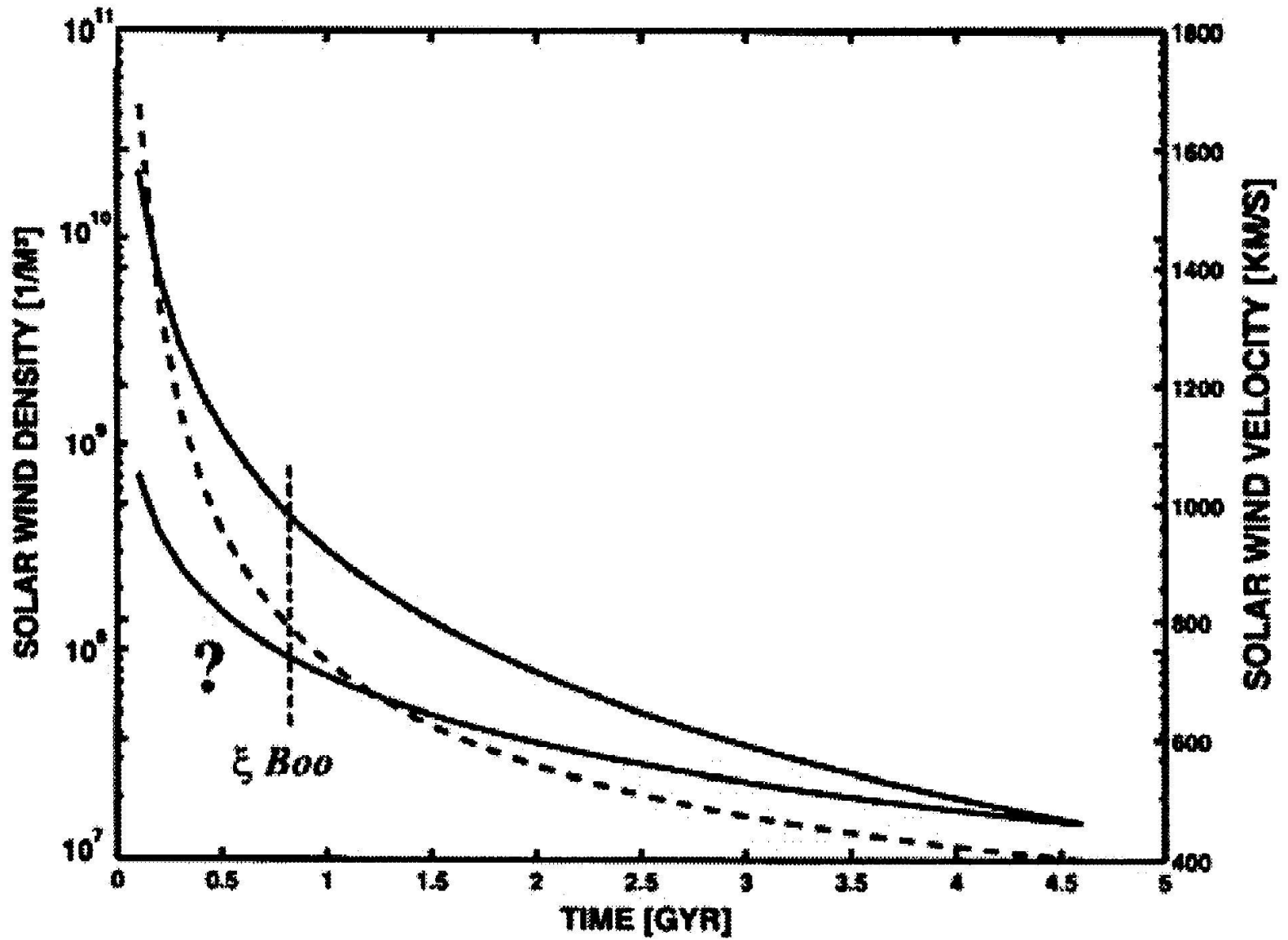








Solar Wind in the distant past



Anthropogenic sources of geospace climate change

