

# Comparison between Chromospheric and Coronal Chirality in Solar Filaments

Masaoki. Hagino, Y. -J. Moon, Y. D. Park  
Korea Astronomy & Space Science Institute  
E-mail: hagino@kasi.re.kr

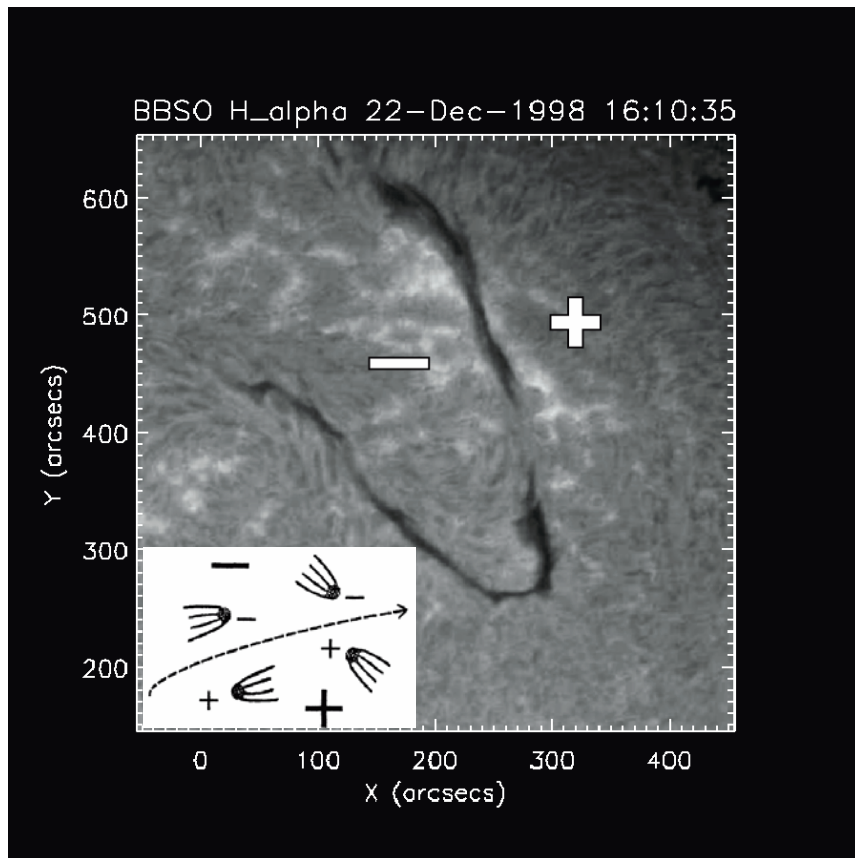
## Motivation

Using Big Bear Solar Observatory  $H\alpha$  and TRACE EUV 171Å data of 60 active regions from 1998 to 2004, we determined filament chirality signs and examined hemispheric tendency.

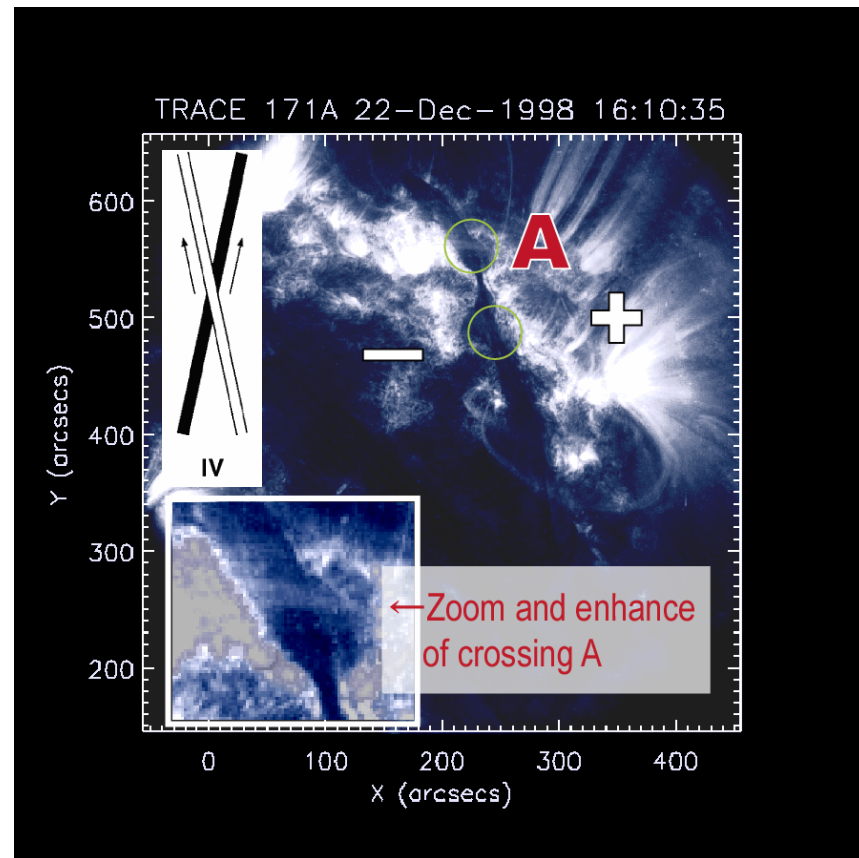


# Chirality of Filaments

(Martin et al. 1998 Solar phys, 182, 107; Chae. 2000 ApJ, 540, L115)

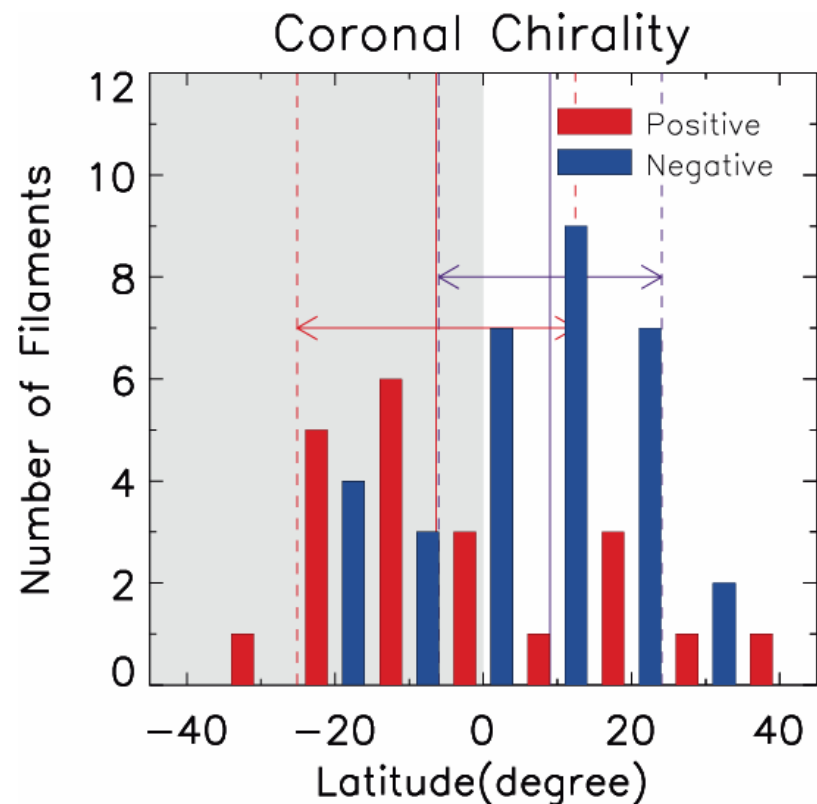
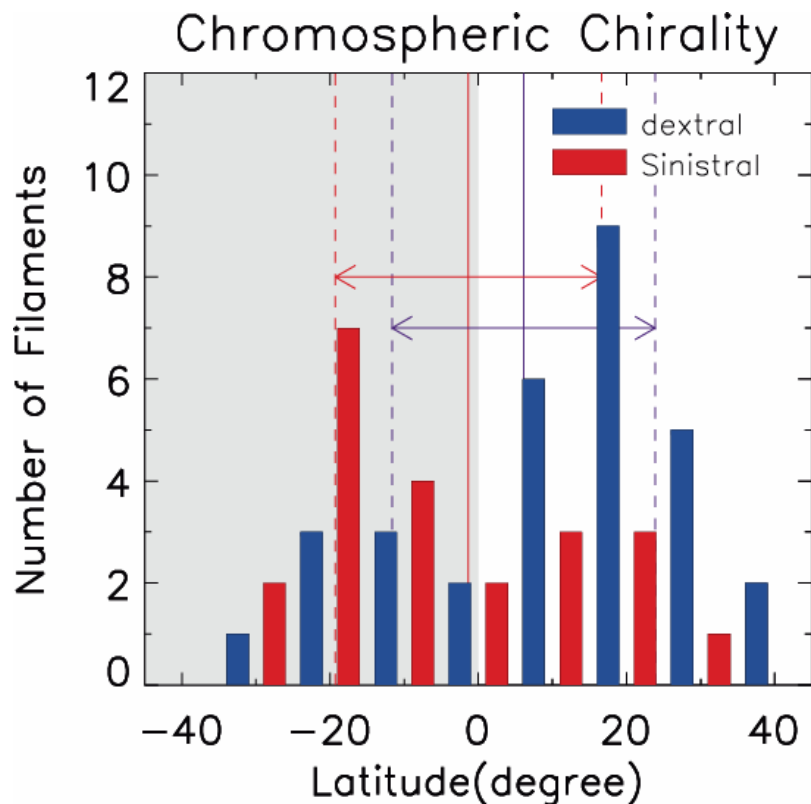


These channels go to right ward form an observer looking at the positive polarity side. Thus, the filament is dextral.



A coronal filament (dark thread) can be seen in absorption over the H $\alpha$  filament. Two circles denote faint crossing threads. This filament has a crossing negative chirality.

# The hemispheric tendency of chirality



Latitudinal distribution of chromospheric filaments. 68% of chromospheric filaments in the northern (southern) hemisphere are dextral (sinistral).

Latitudinal distribution of coronal filaments. 73% of coronal filaments in the northern (southern) hemisphere are negative (positive).

# Discussion

Comparing between chromospheric and coronal chirality, about 60% of filaments in each hemisphere exhibit that **dextral** (**sinistral**) filament show **negative** (**positive**) chirality.

