

STE quiet-time observations during solar minimum

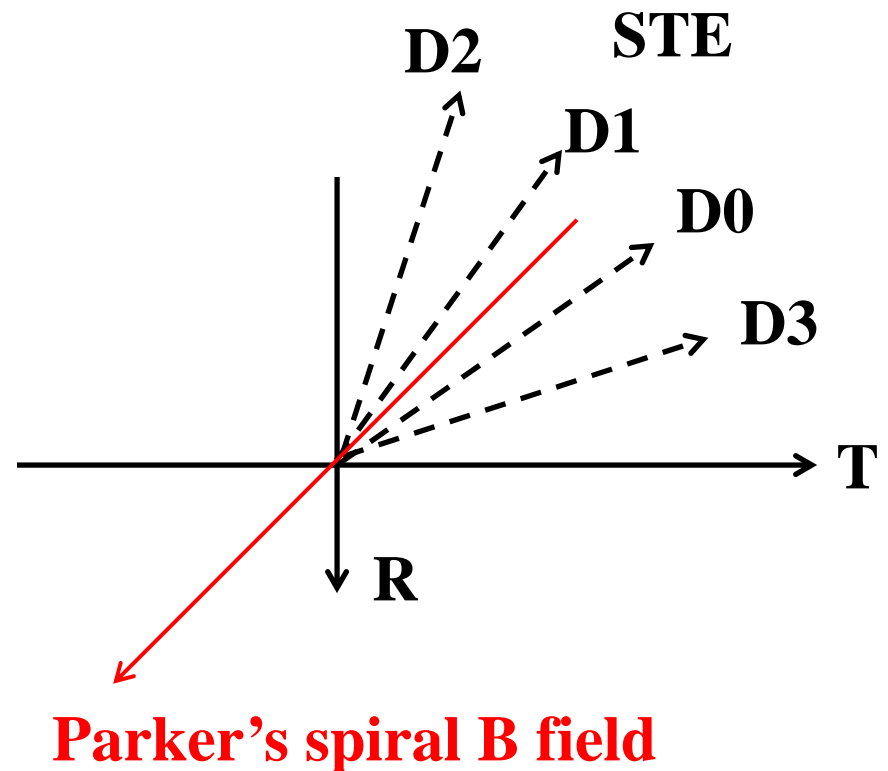
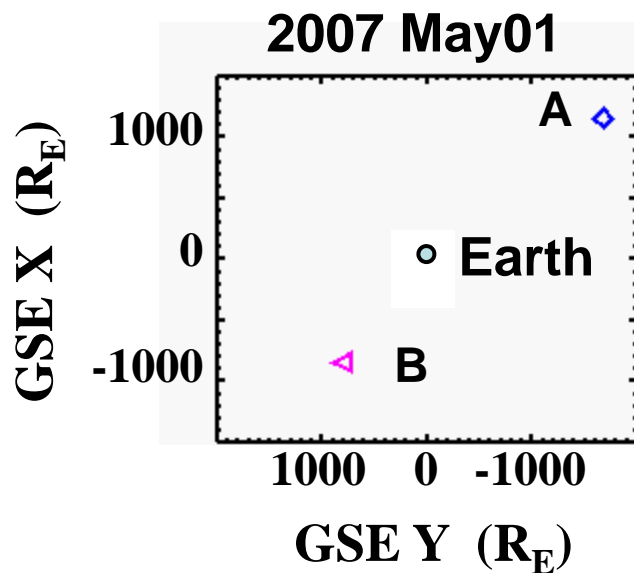
**Linghua Wang, Robert Lin and Janet Luhmann
SSL, UC Berkeley**

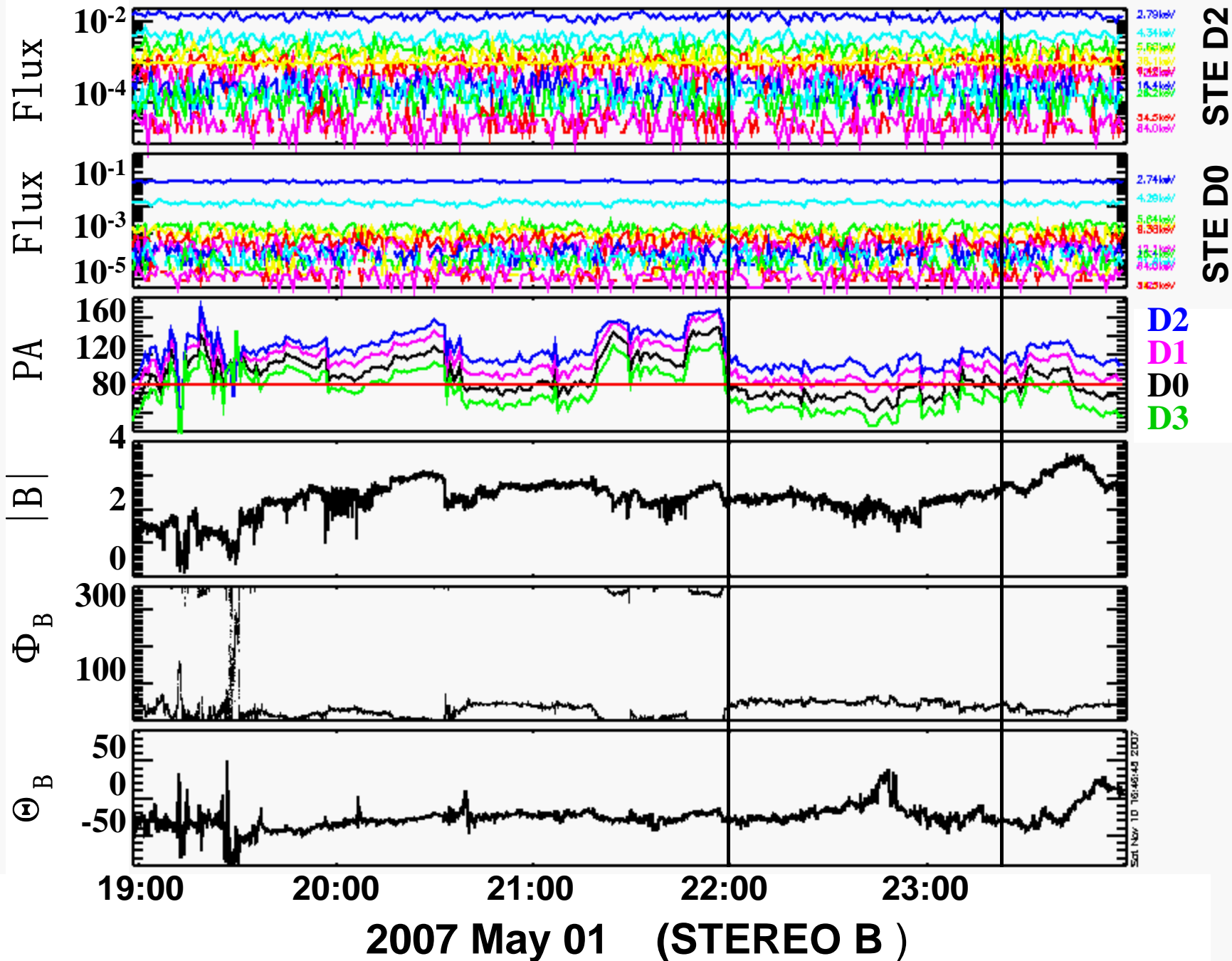
Outline

- 1. Superthermal electron tail in the quiet-time solar wind**
- 2. Pick-up ions**
- 3. The ion beam traveling radially towards the Sun ??**

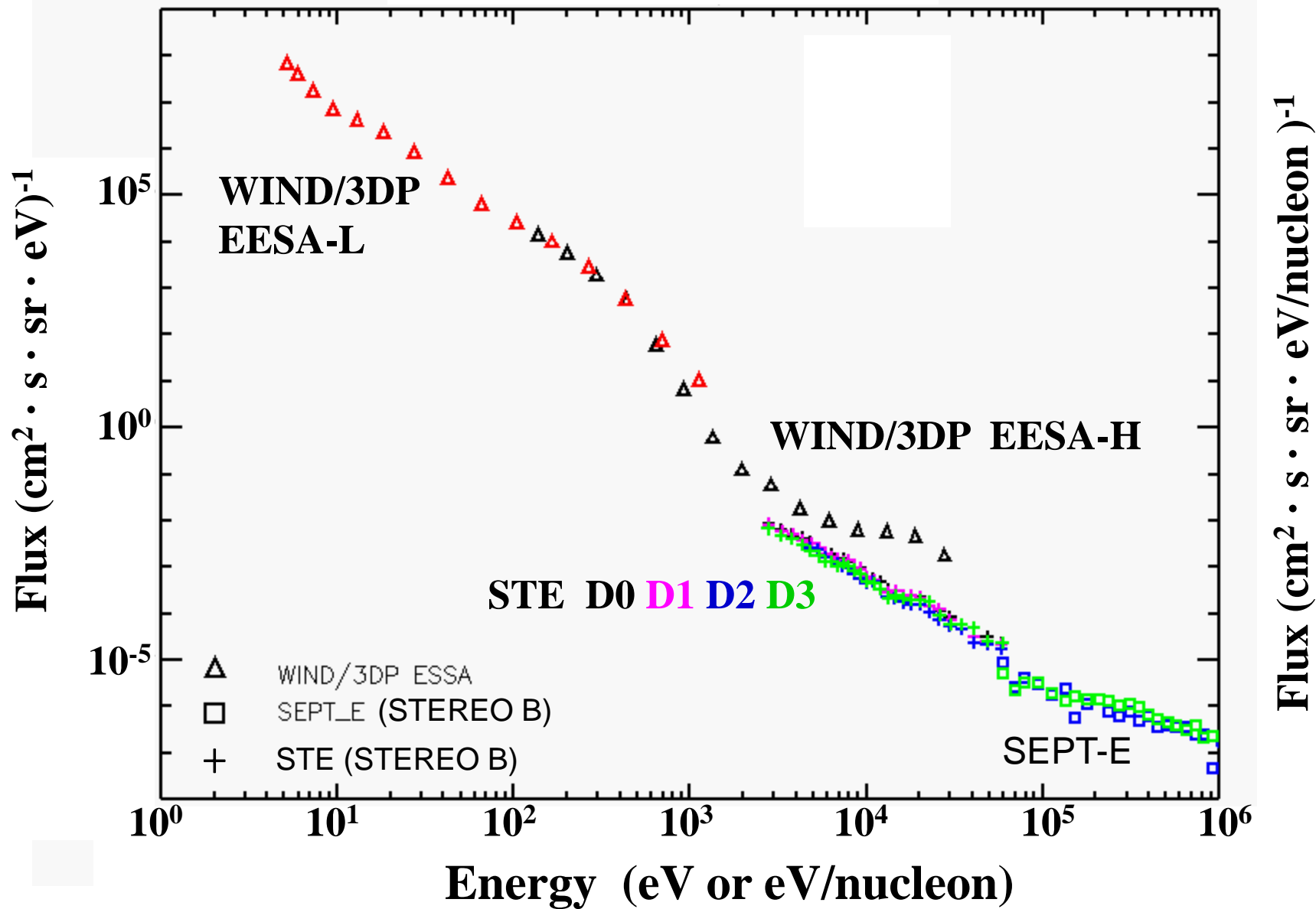
1. Superthermal electron tail ($\sim 2-100$ keV)

Sun 

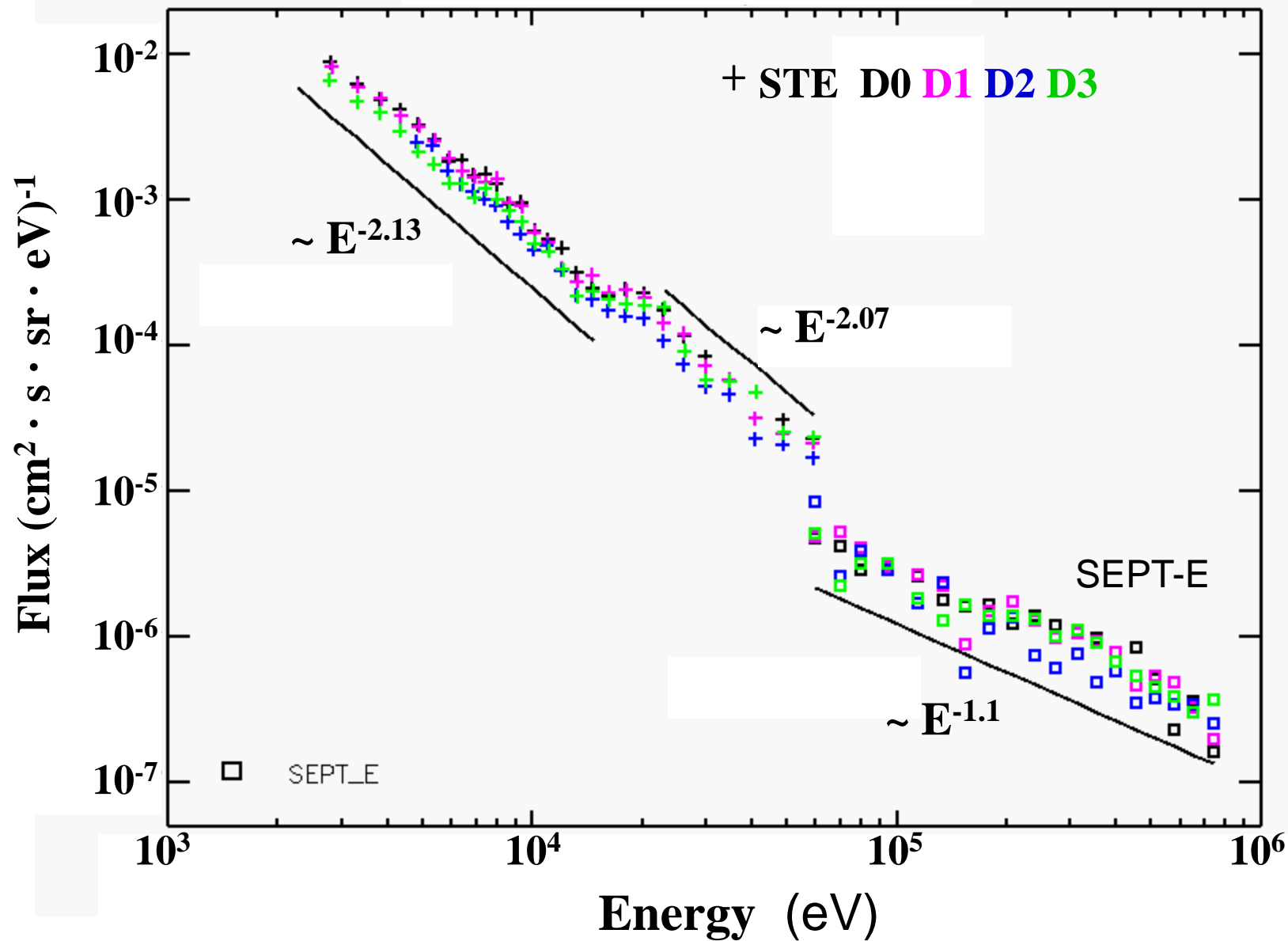




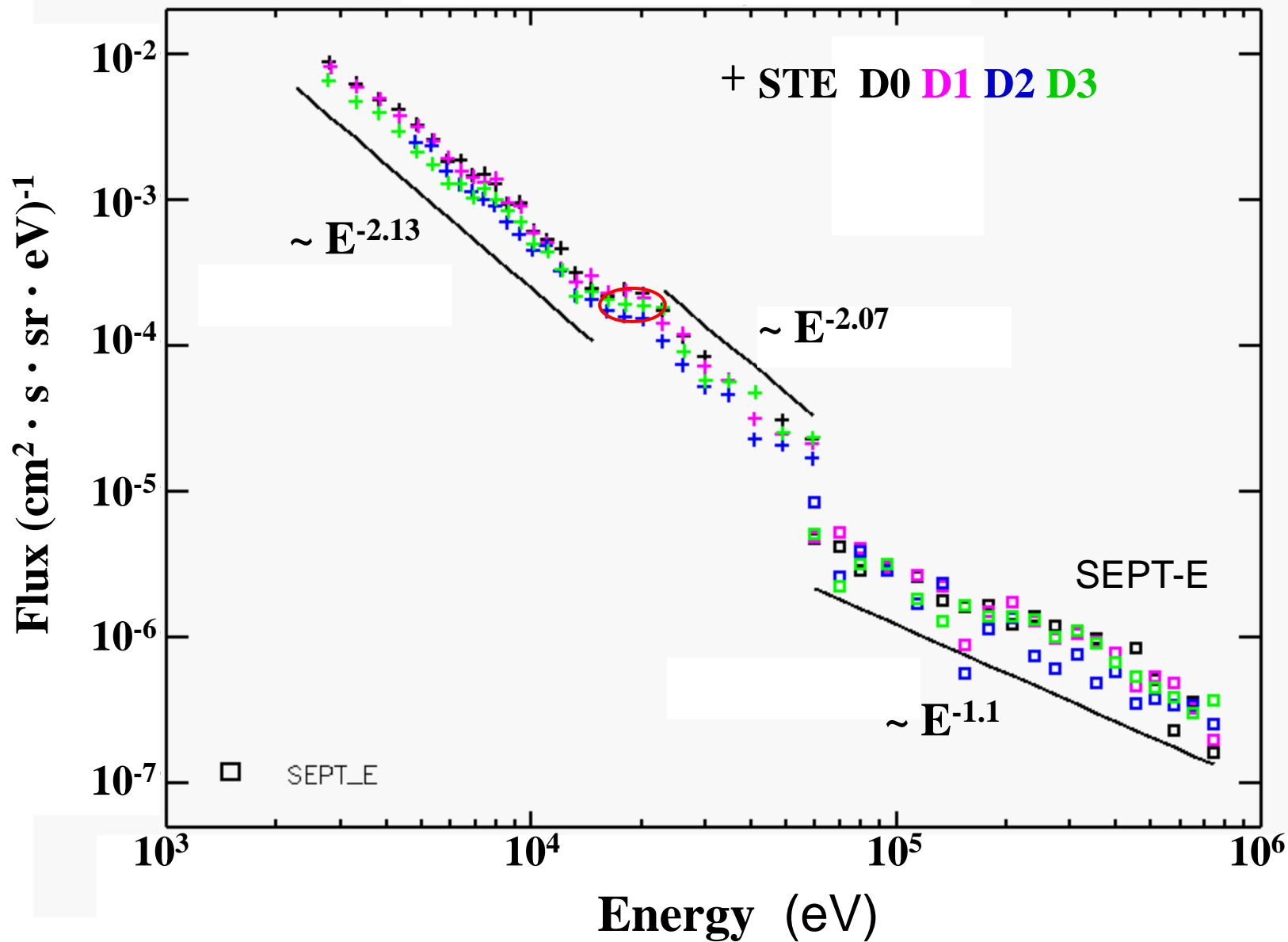
2007 May01



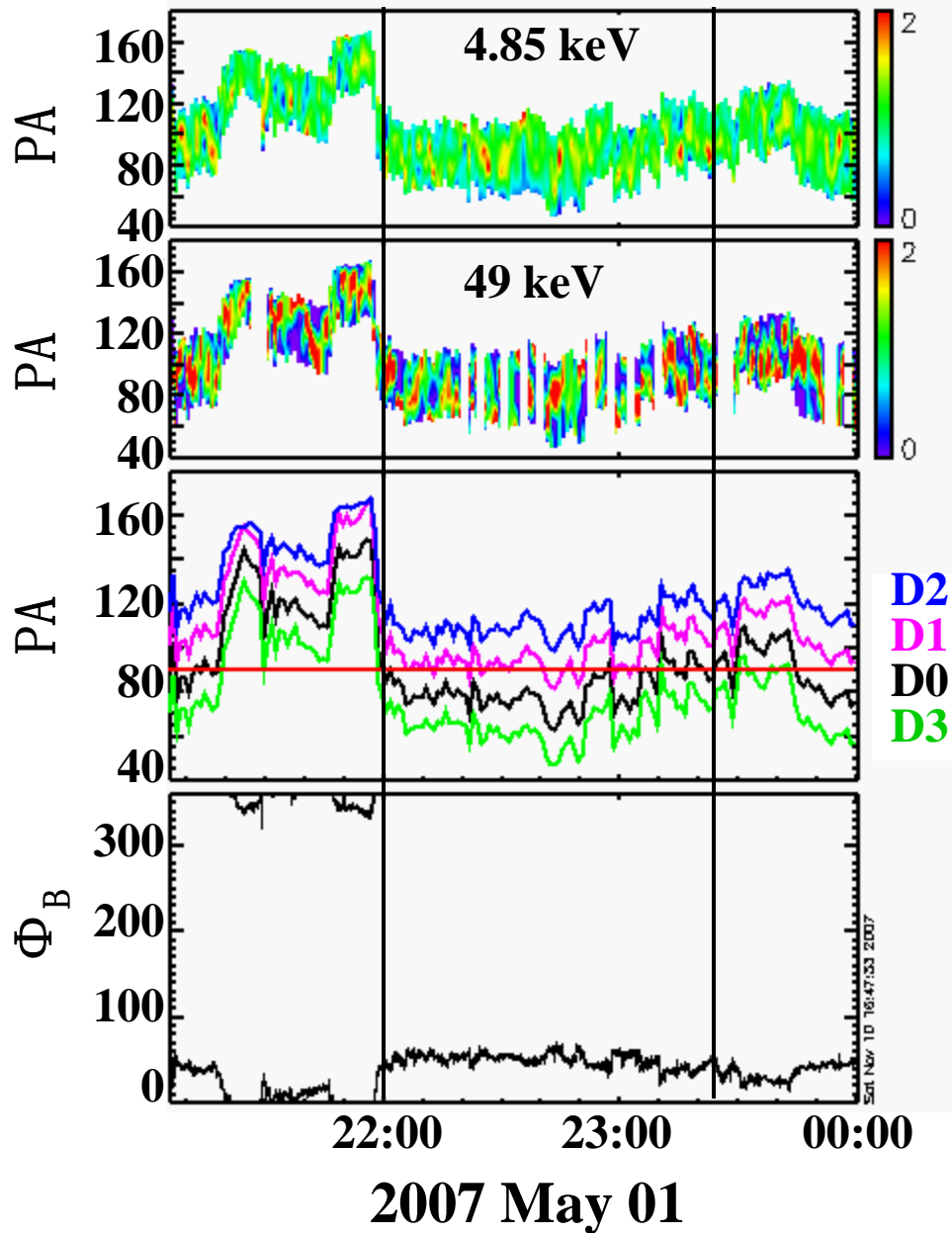
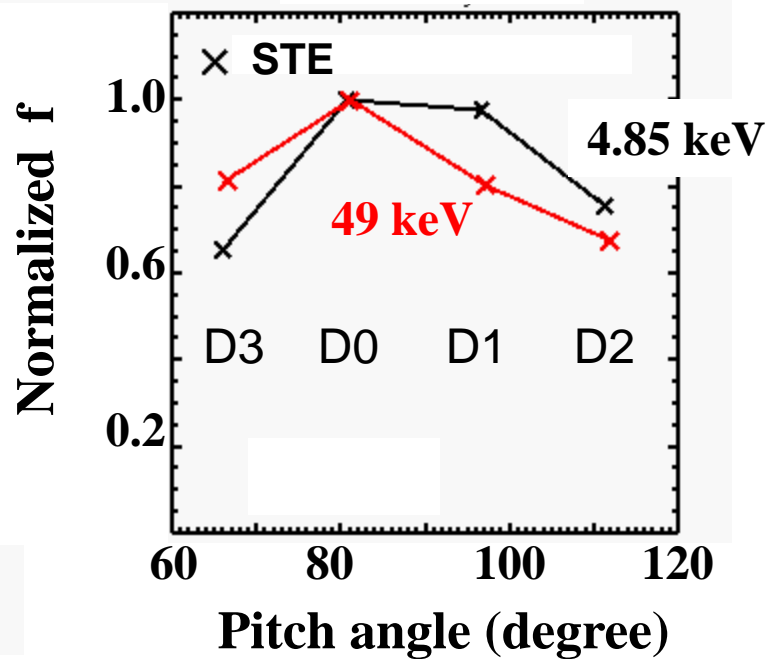
2007 May01 (STEREO B)



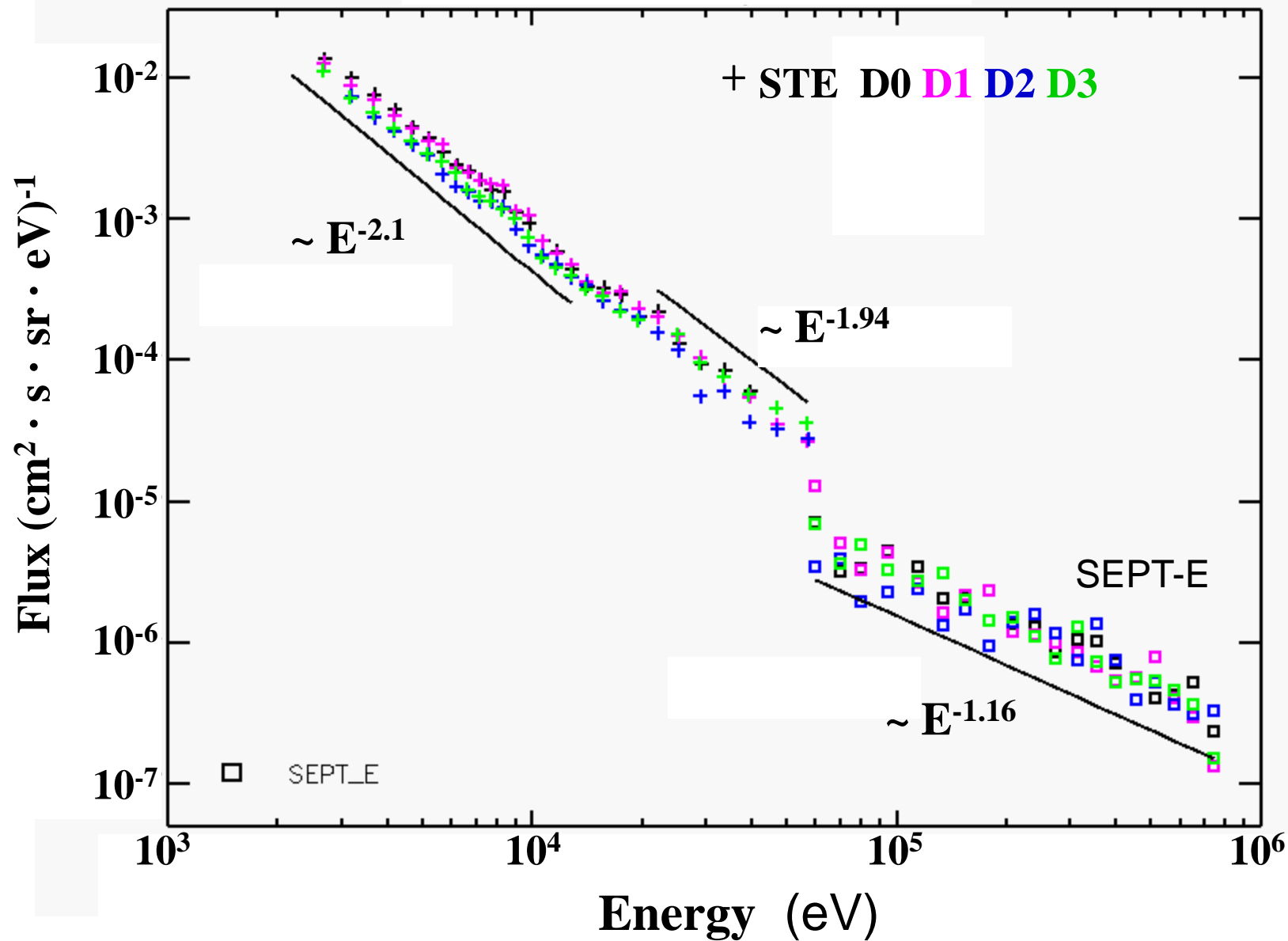
2007 May01 (STEREO B)



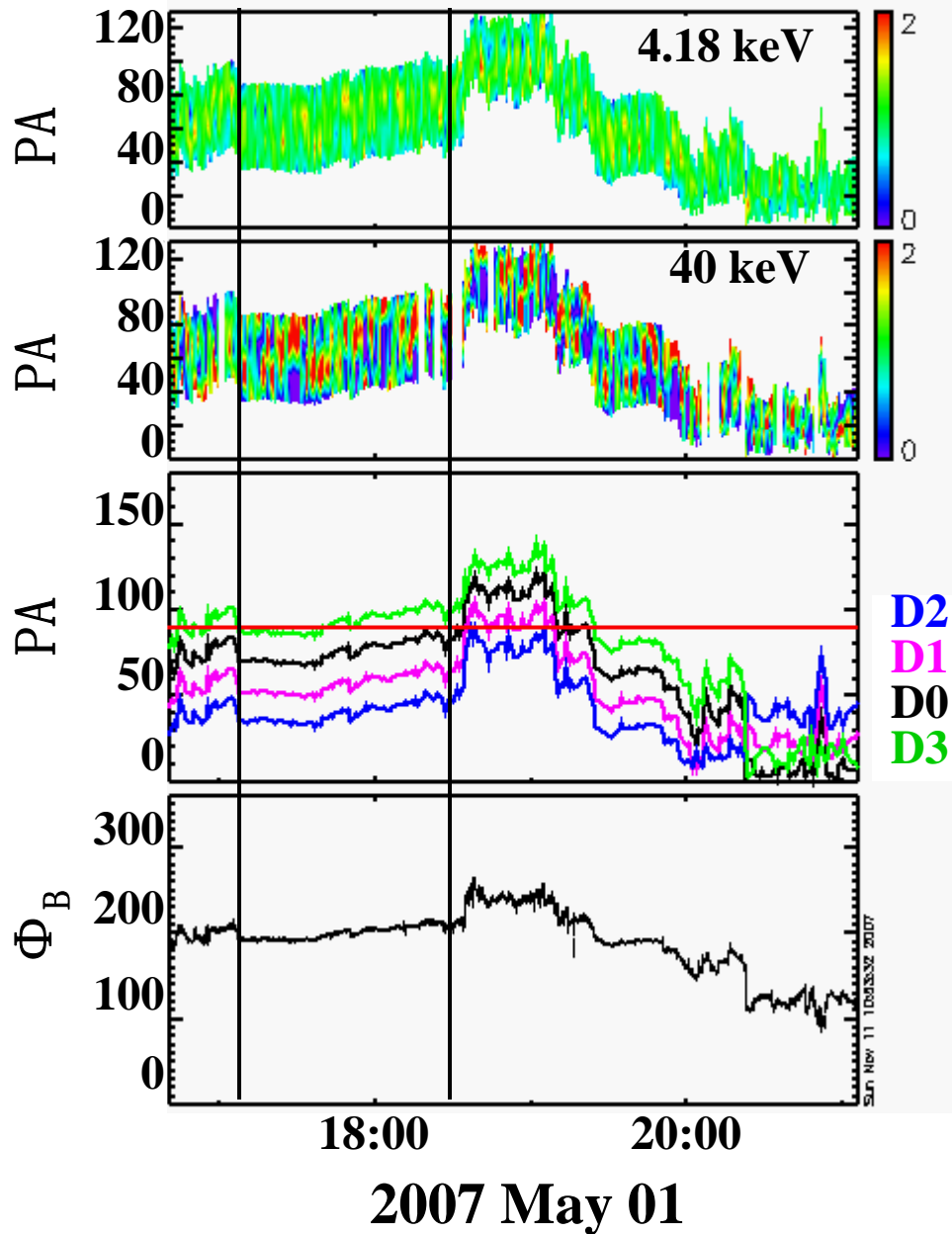
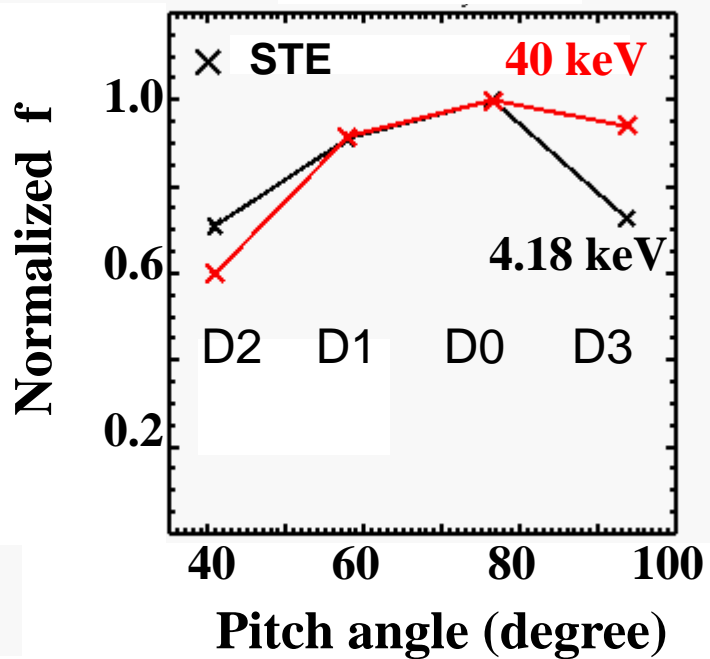
STEREO B



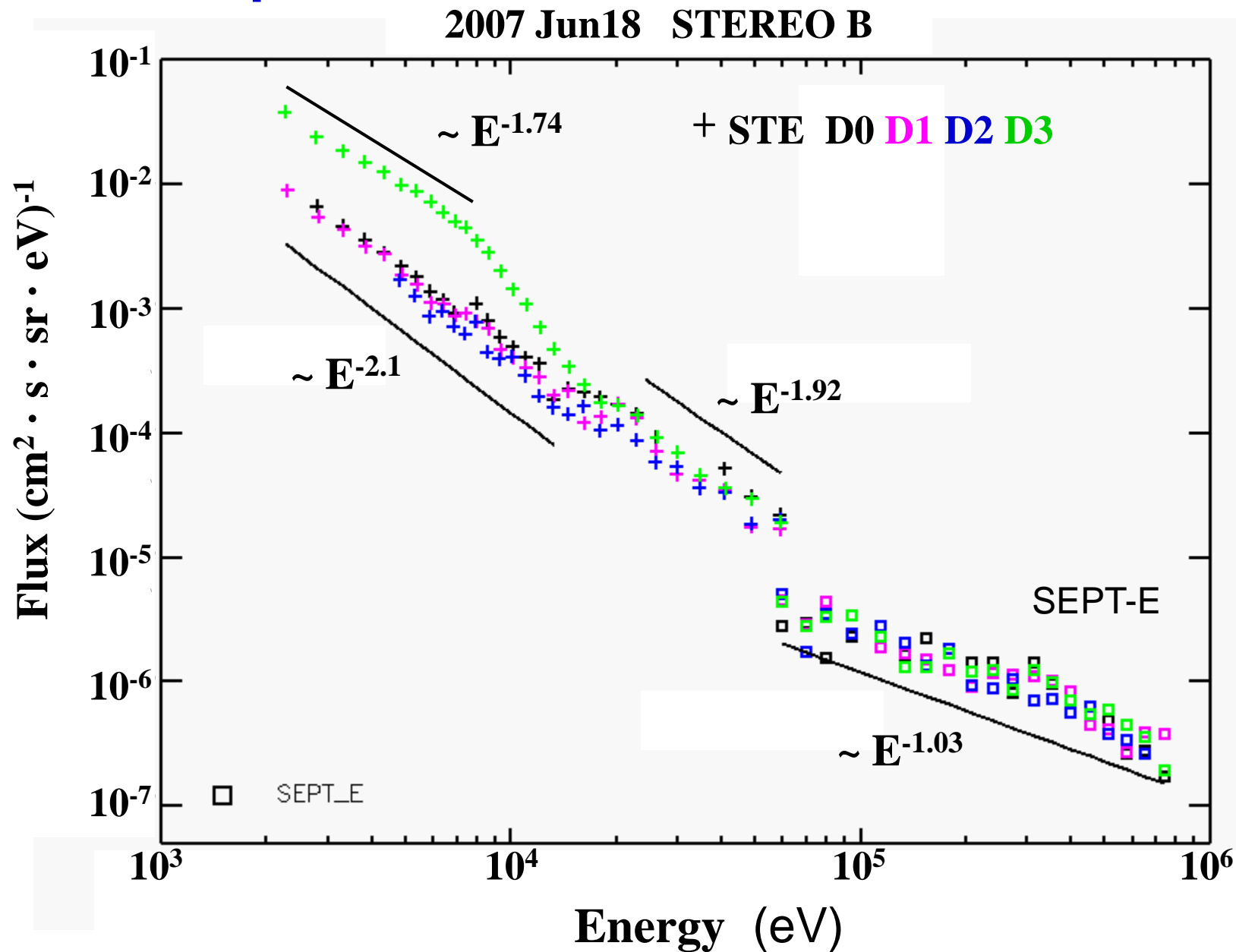
2007 May01 STEREO A



STEREO A

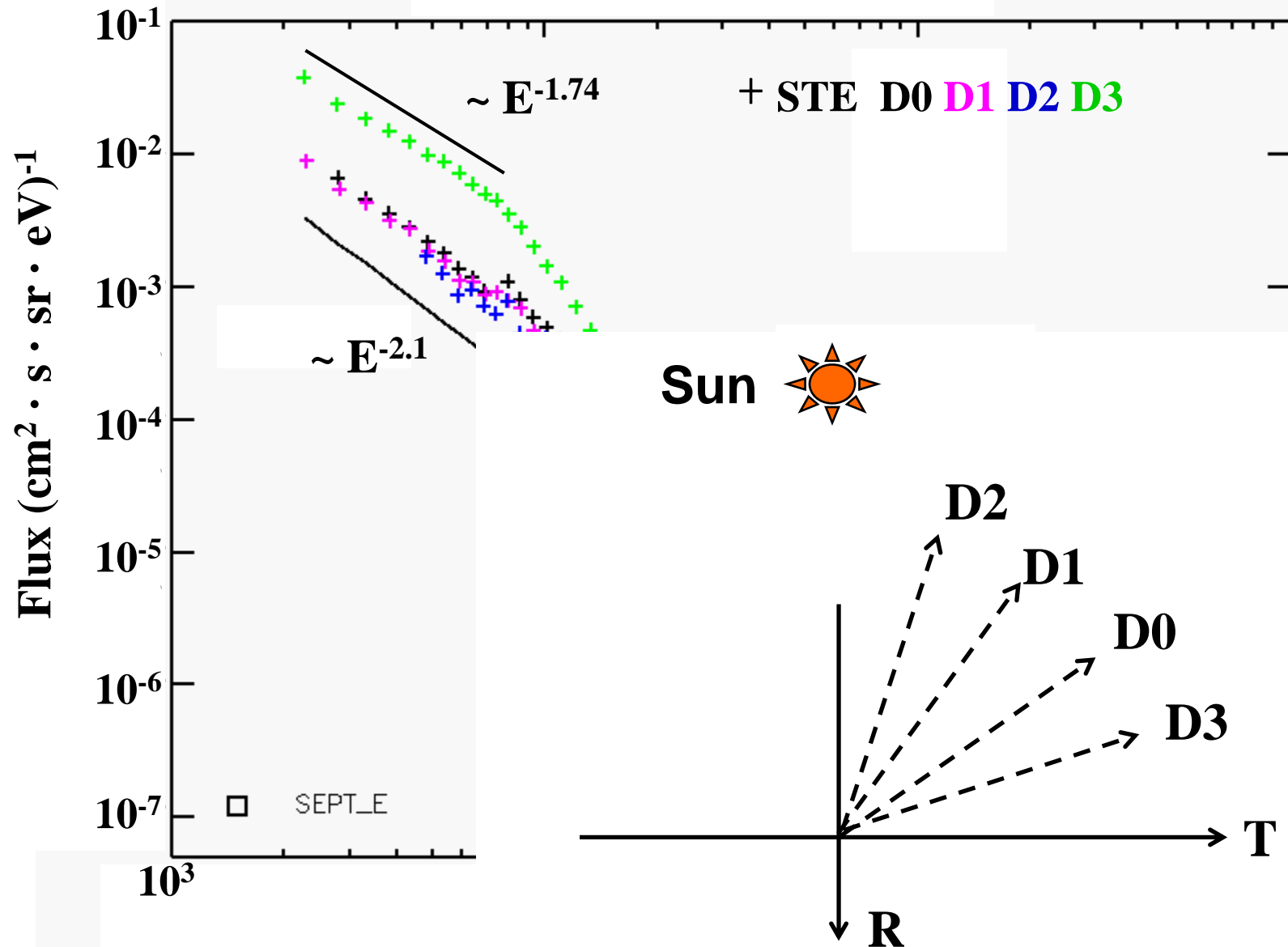


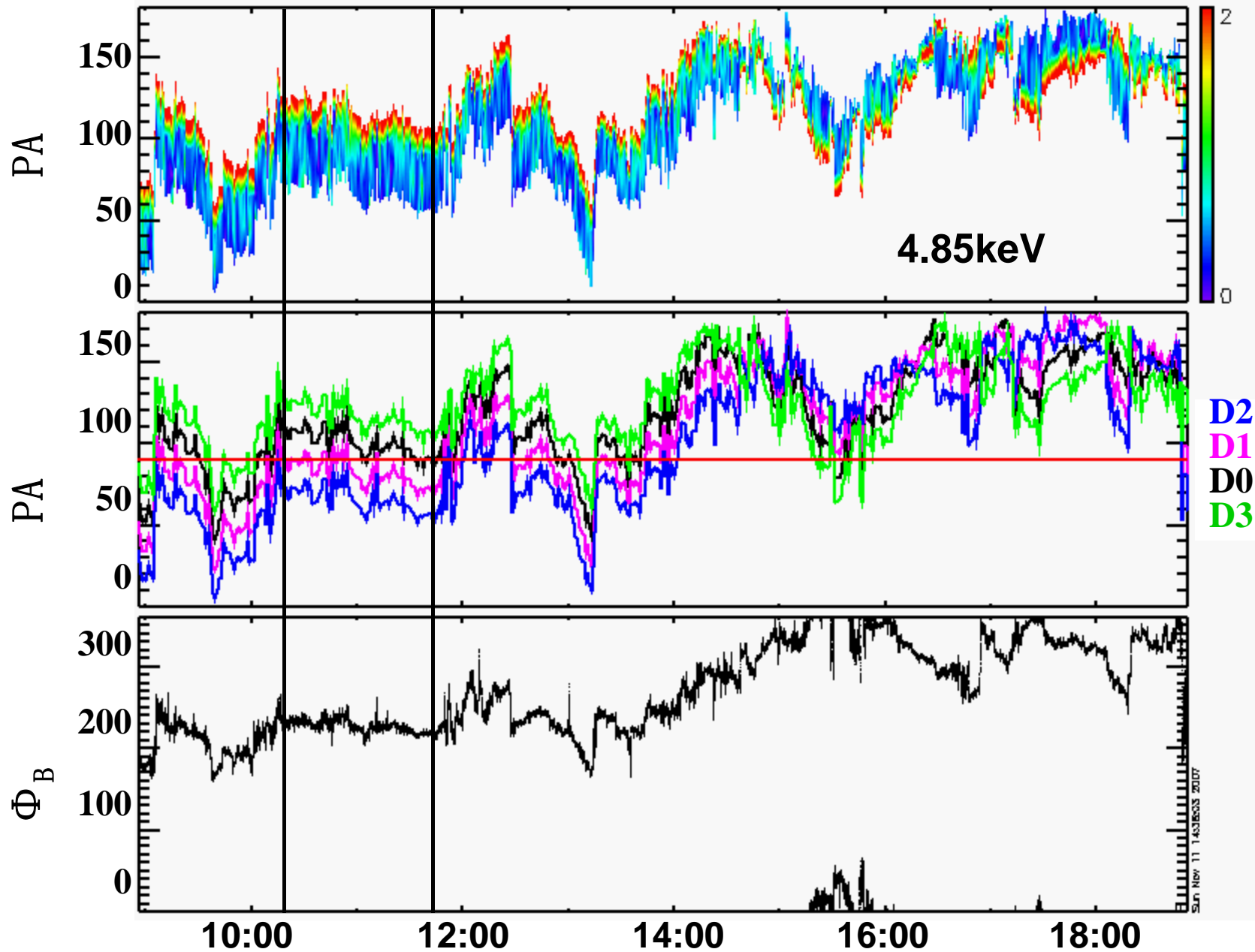
2. Pick-up ions



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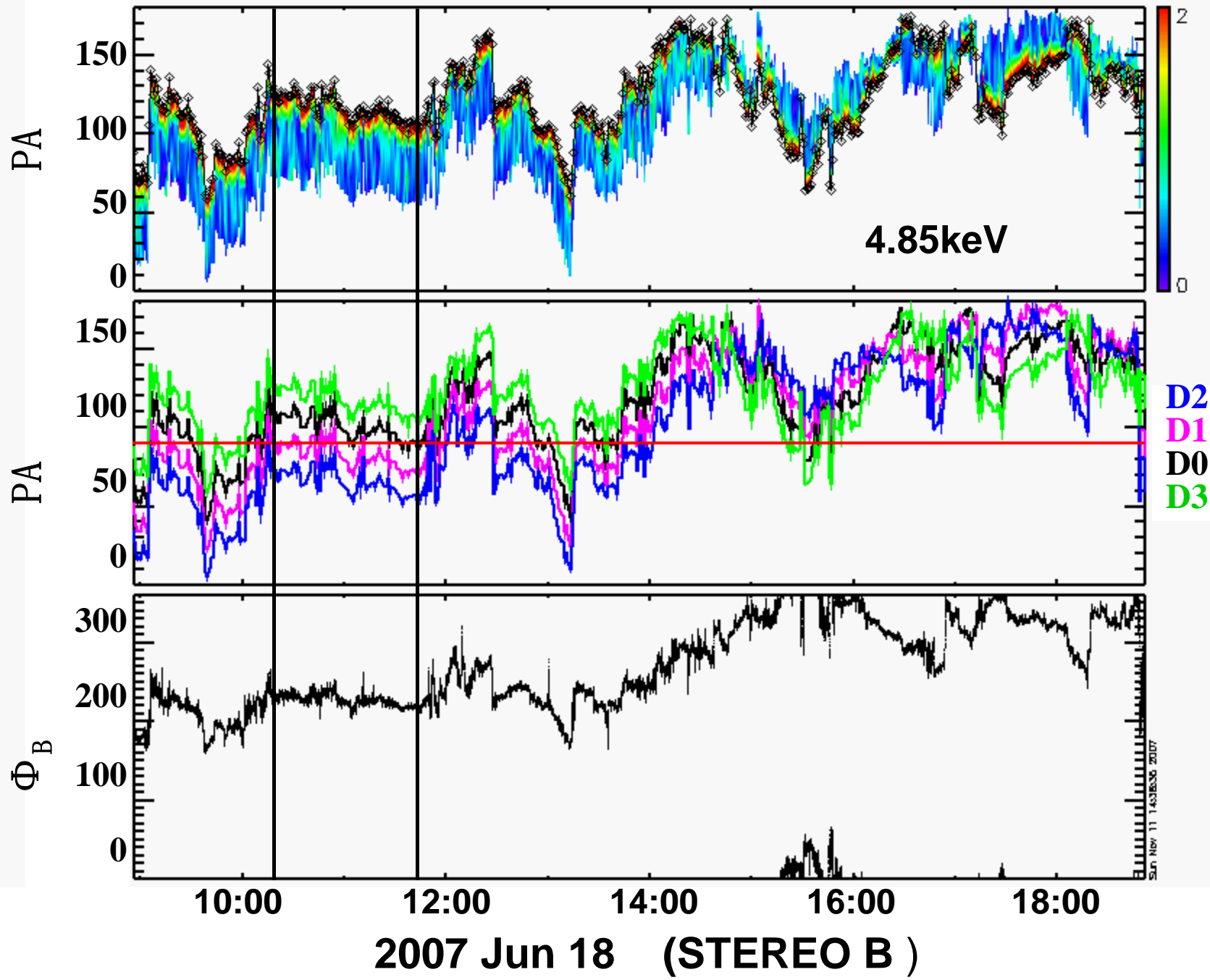
2007 Jun18 STEREO B

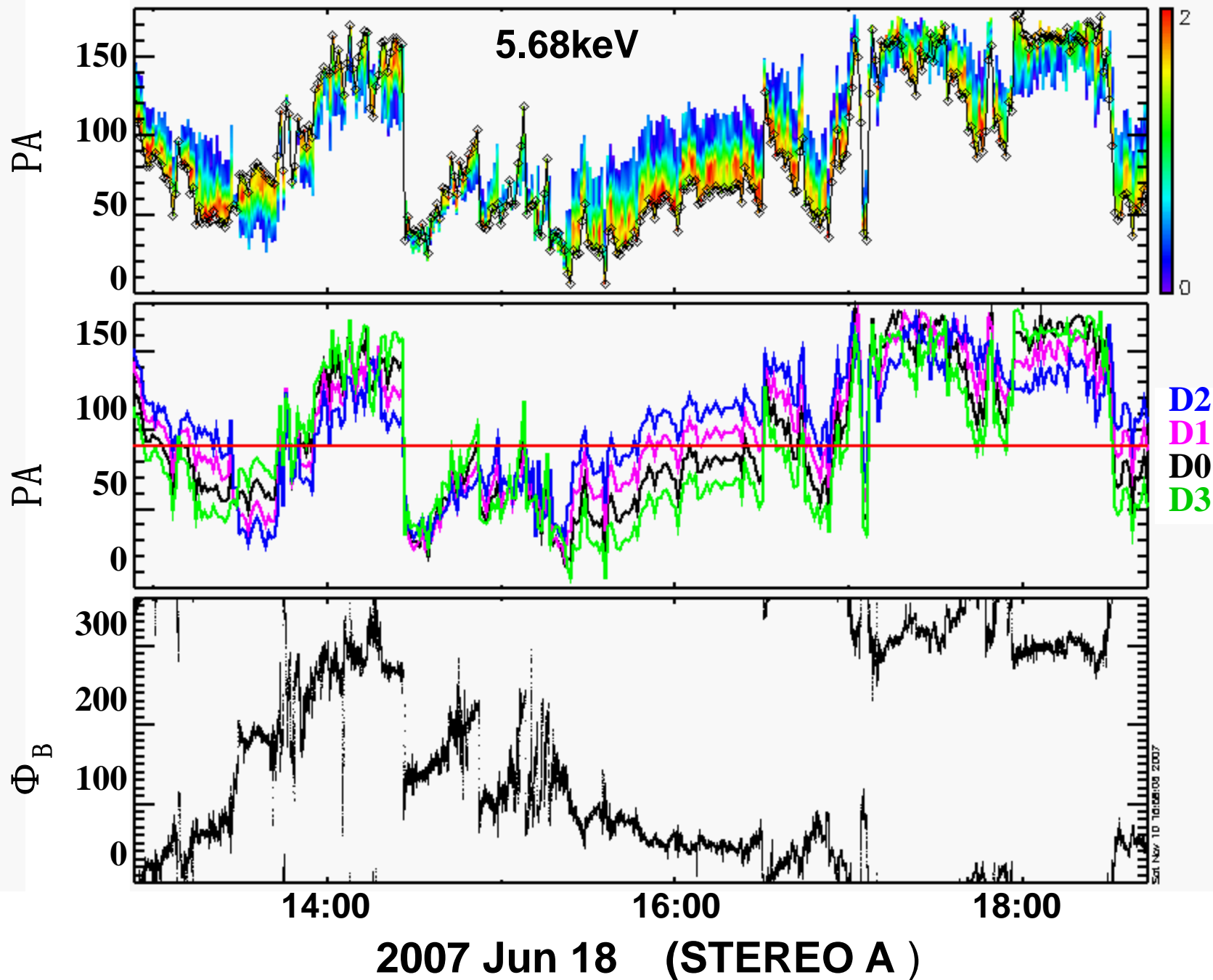


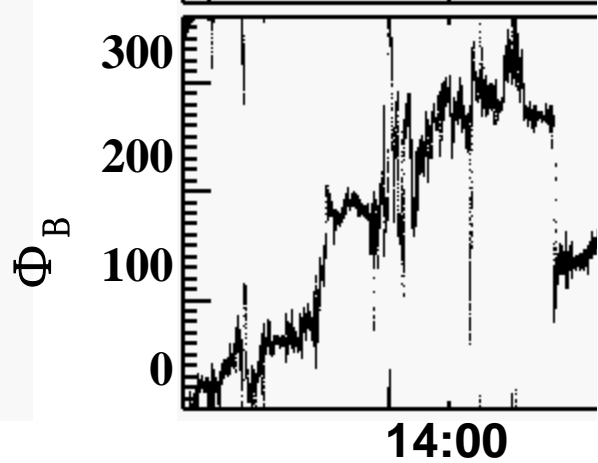
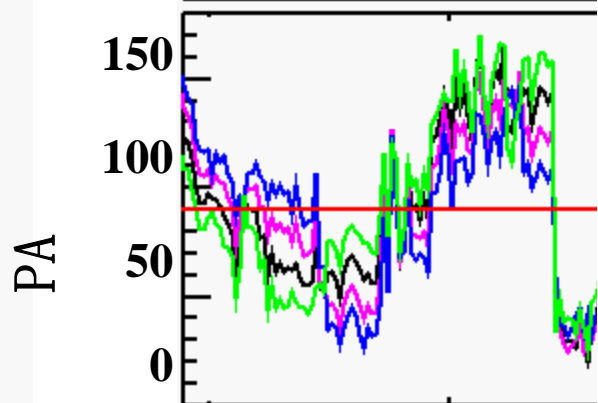
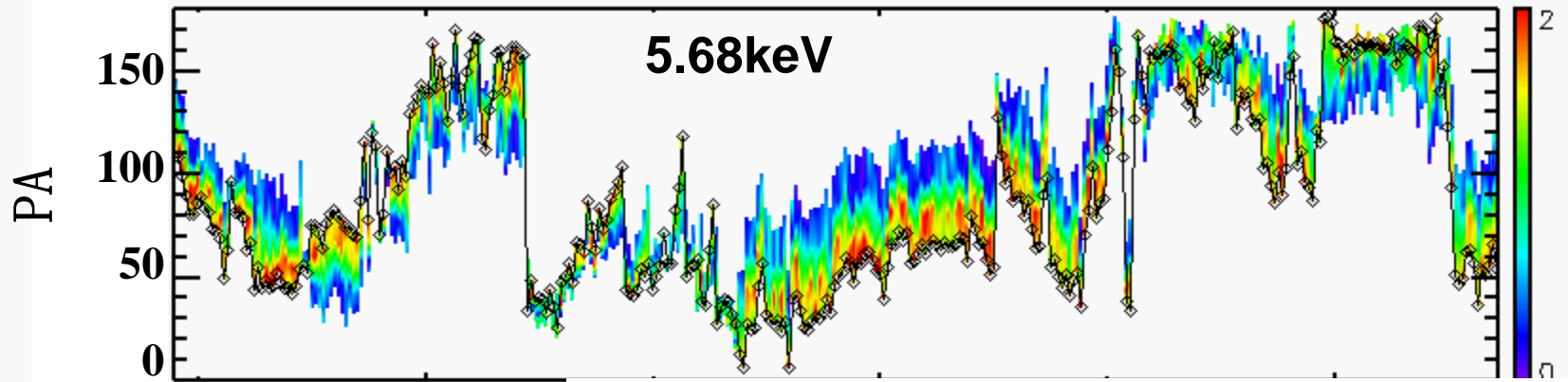


2007 Jun 18 (STEREO B)

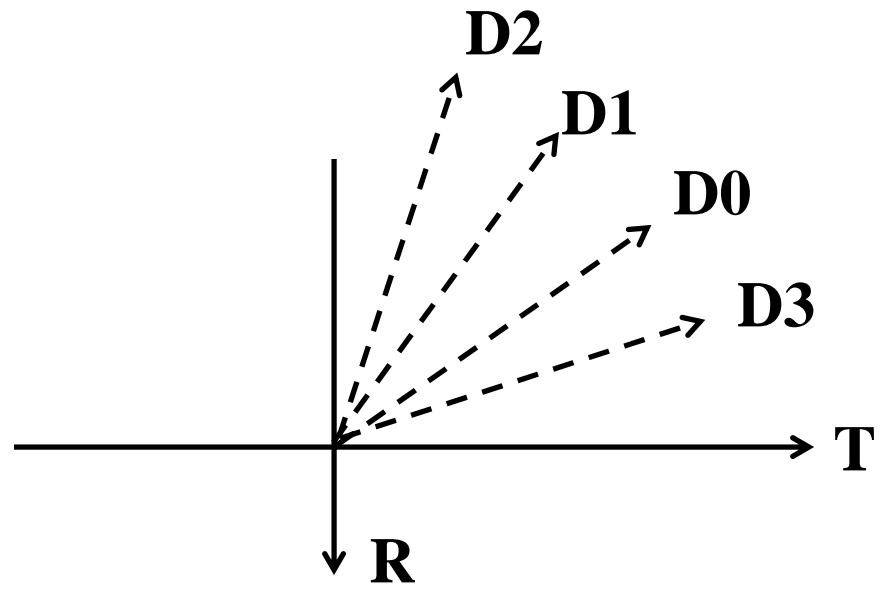
SUN: NOV 11 14:53:03 2007





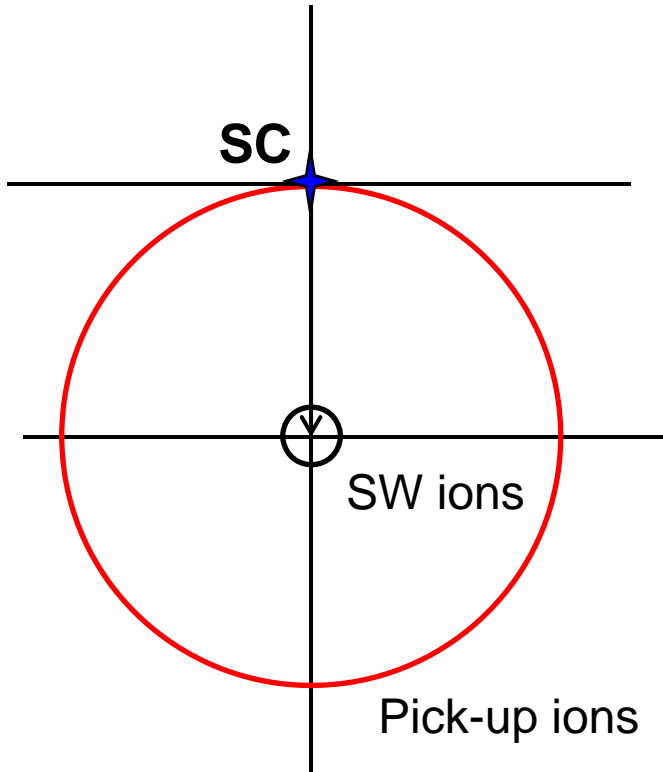


Sun 

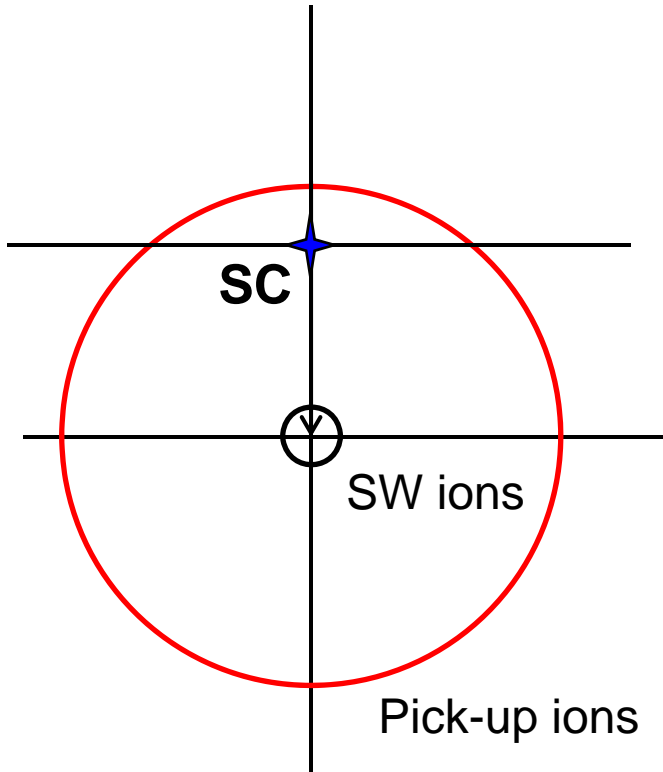


200

Sun 

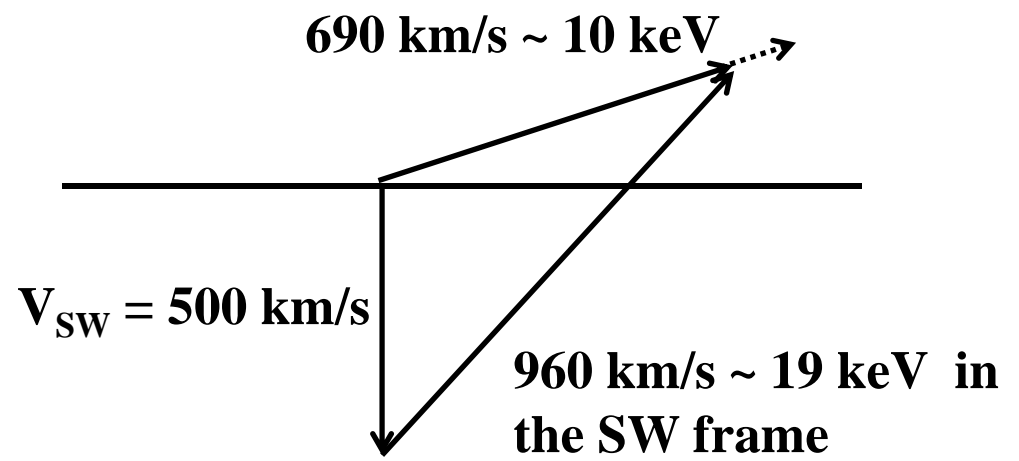
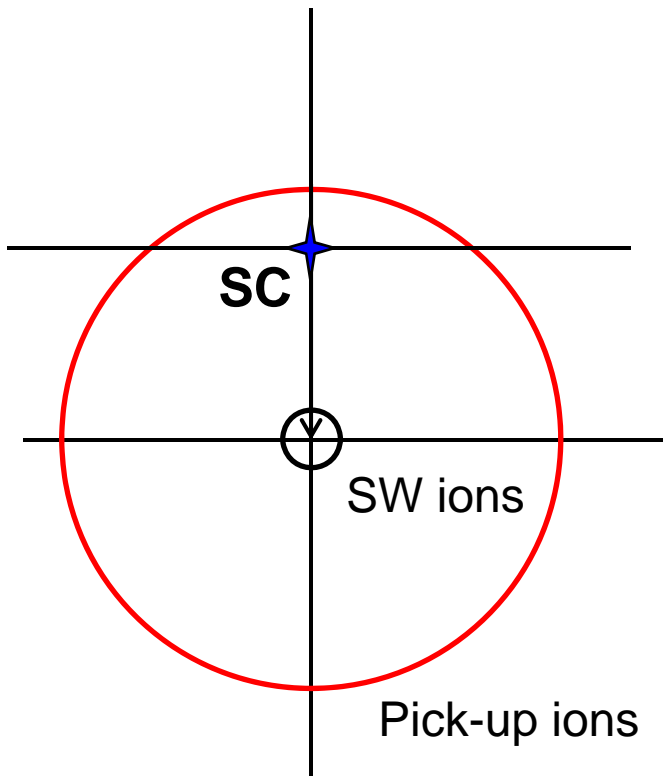


Sun 





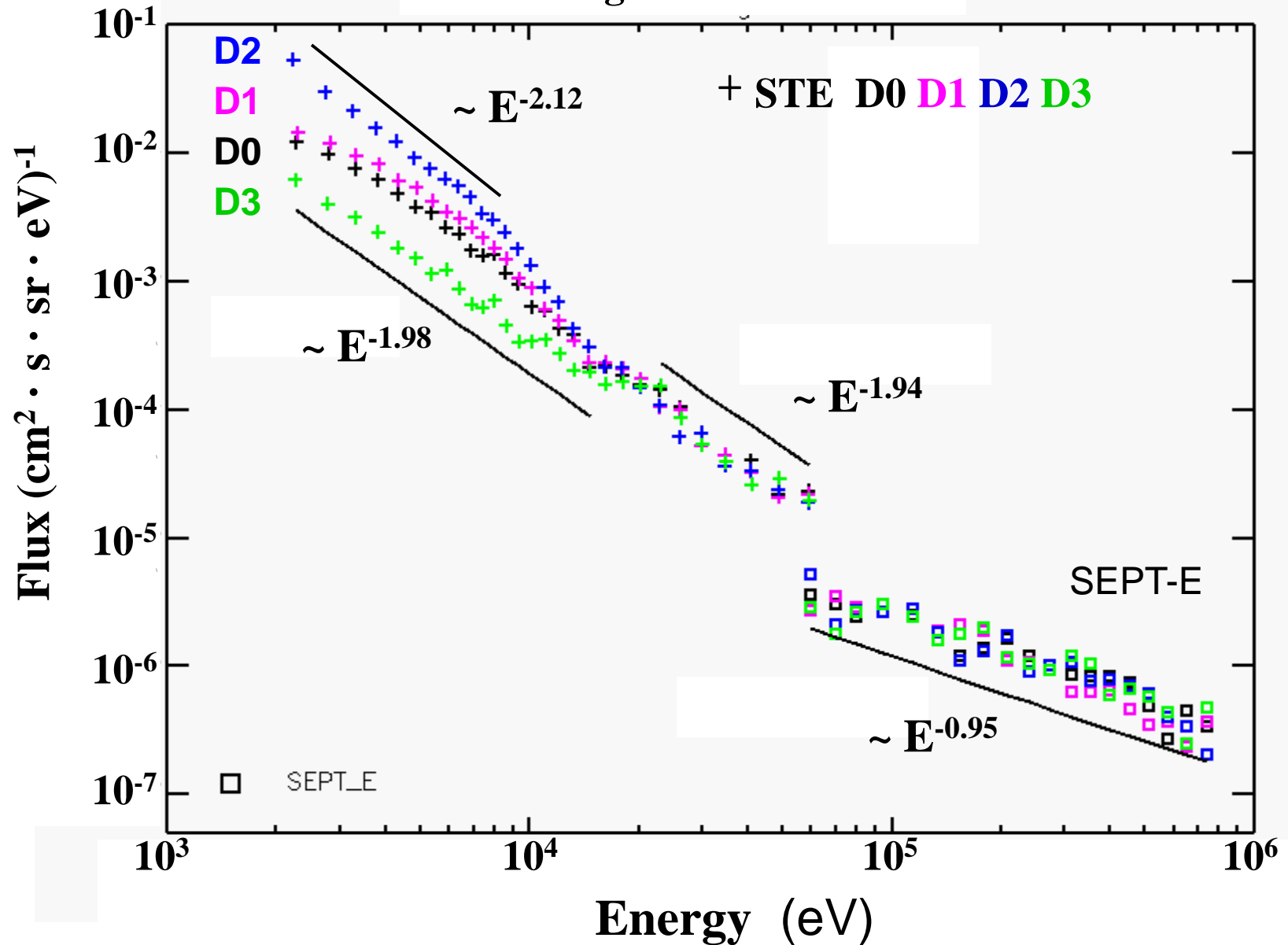
D3



Assume He⁺

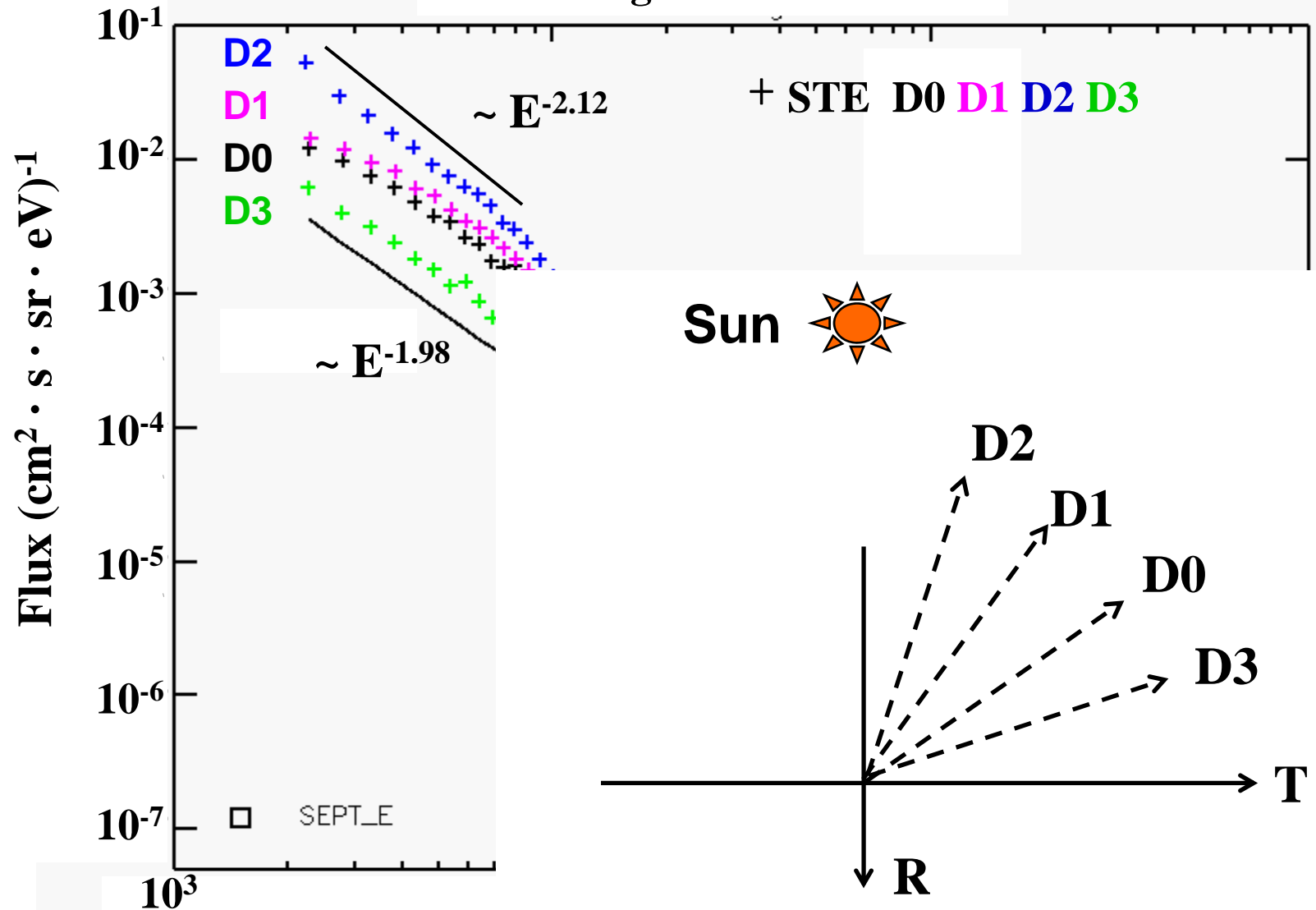
3. Ion beam traveling radially inward ?

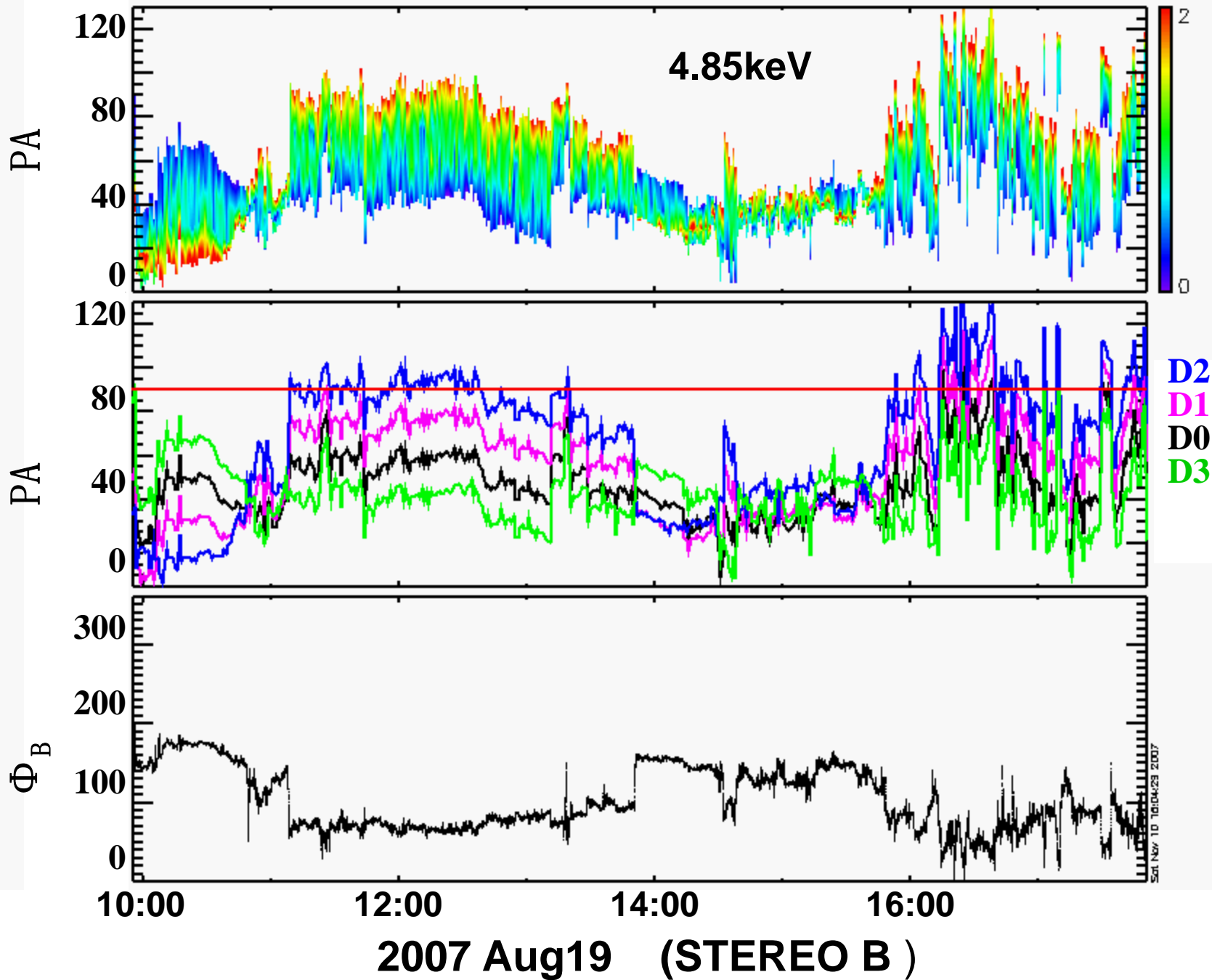
2007 Aug19 STEREO B

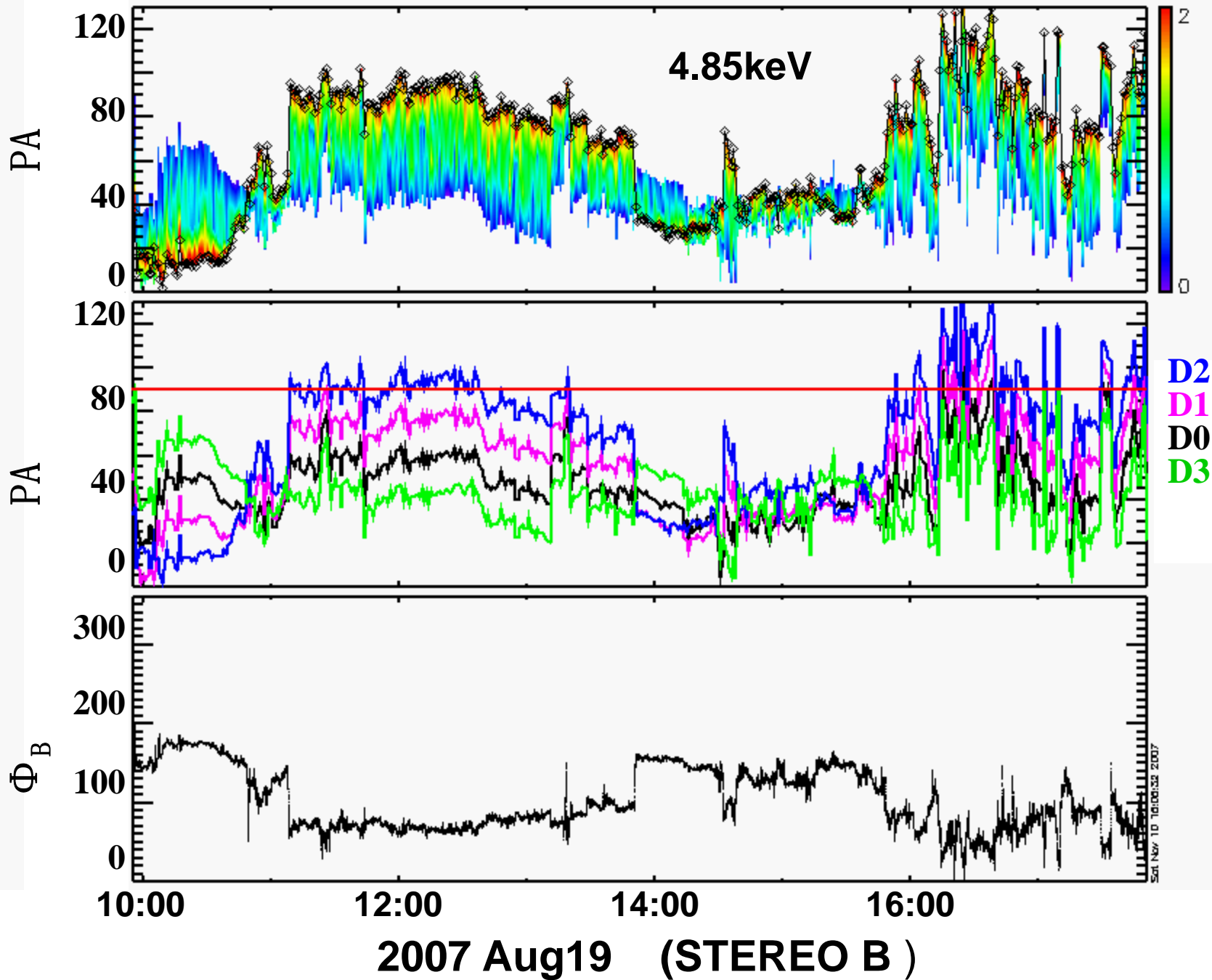


3. Particles traveling radially inward ?

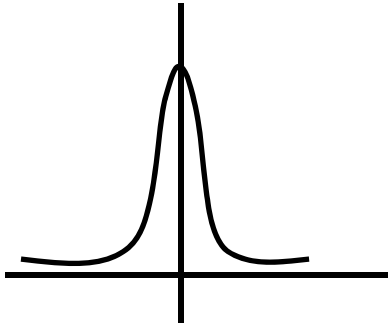
2007 Aug19 STEREO B







Sun 



690 km/s ~ 10 keV in the SC frame

$V_{sw} = 350$ km/s

D2

~22 keV

D1

~21 keV

D0

~18 keV

D3

870 km/s ~ 16 keV in the SW frame

Assume He ions

Conclusions

1. Superthermal electron tail ($\sim 2-20$ keV) in the solar wind during solar minimum:

Power law, $\gamma \sim -2$; isotropic

2. Pick-up ions, ~ 20 keV (if He^+) in the solar wind frame

3. Ion beam traveling radially towards the Sun ??

2007Oct29

